LJ85-10C

SOUTHWEST FISHERIES CENTER
NATIONAL MARINE FISHERIES SERVICE
SOUTHWEST FISHERIES CENTER
P.O. BOX 271
LA JOLLA, CA 92038

LIBRARY
JUN 17 1985
National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii

FEBRUARY 1985

# CALIFORNIA DEPARTMENT OF FISH AND GAME, COASTAL MARINE MAMMAL STUDY, ANNUAL REPORT FOR THE PERIOD JULY 1, 1982 - JUNE 30, 1983

BY

DOYLE A. HANAN

**ADMINISTRATIVE REPORT** LJ-85-10C

This report is used to insure prompt dissemination of preliminary results, interim reports, and special studies to the scientific community. The material is not ready for formal publication since the paper may later be published in a modified form to include more recent information or research results. Abstracting, citing, or reproduction of this information is not allowed. Contact author if additional information is required.

# CALIFORNIA DEPARTMENT OF FISH AND GAME, COASTAL MARINE MAMMAL STUDY, ANNUAL REPORT FOR THE PERIOD JULY 1, 1982 - JUNE 30, 1983

Doyle A. Hanan
Project Leader

California Department of Fish and Game
c/o Southwest Fisheries Center
La Jolla, California 92038

February 1985

This report was prepared by Doyle A. Hanan under Contract No. 81-ABC-00182 for the National Marine Fisheries Service, Southwest Fisheries Center, La Jolla, California. The statements, findings, conclusions and recommendations herein are those of the author and do not necessarily reflect the views of the National Marine Fisheries Service. Dr. Douglas P. DeMaster of the Southwest Fisheries Center served as Chief Official Technical Representative for this contract.

Administrative Report LJ-85-10C

CONTENTS


| | PAGE |
|---|---|
| INTRODUCTION | 1 |
| HARBOR SEAL, PHOCA VITULINA RICHARDSI, CENSUSES IN CALIFORNIA, APRIL AND JUNE, 1983 | 2 |
| SHARK DRIFT GILL NET FISHERY OBSERVATION PROGRAM, MAY-JUNE, 1983 | 10 |
| SEASONAL AND DIURNAL MOVEMENTS OF HARBOR SEALS PHOCA VITULINA RICHARDSI, IN THE KLAMATH RIVER, CALIFORNIA | 13 |
| ACOUSTIC HARASSMENT TESTING IN THE SAN FRANCISCO BAY PACIFIC HERRING, CLUPEA HARENGUS, GILL NET AND PURSE SEINE FISHERIES | 36 |
| ACOUSTIC HARASSMENT TESTING IN THE KLAMATH RIVER SALMON FISHERY | 40 |
| EFFECTS OF CRACKERSHELLS ON CALIFORNIA SEA LIONS, ZALOPHUS CALIFORNIANUS, INTERACTING WITH THE SOUTHERN CALIFORNIA PARTYBOAT FISHERY | 42 |
| ACOUSTIC HARASSMENT AND CRACKERSHELL TESTS IN THE SOUTHERN CALIFORNIA PARTYBOAT FISHERY | 48 |
| APPENDIX I. CENSUS RESULTS FOR THE APRIL 1983 SURVEY | 52 |
| APPENDIX II. CENSUS RESULTS FOR THE JUNE 1983 SURVEY | 62 |
| APPENDIX III. TOTAL HARBOR SEAL COUNTS BY HAULING SITE AND CENSUS | 72 |

# CALIFORNIA DEPARTMENT OF FISH AND GAME, COASTAL MARINE MAMMAL STUDY, ANNUAL REPORT FOR THE PERIOD JULY 1, 1982 - JUNE 30, 1983

Doyle A. Hanan

California Department of Fish and Game
c/o Southwest Fisheries Center
La Jolla, California 92038

## INTRODUCTION

This report describes ongoing research projects of California Fish and Game's coastal marine mammal study. These projects are part of a cooperative effort with National Marine Fisheries Service to identify sources of marine mammal/fisheries interactions and conflict. Once identified, we are searching for means to amelio rate or mitigate the interactions. The study has also participated in efforts to determine the status of marine mammal stocks off California by investigating their numbers, distribution, and migratory patterns.

Presented in this report are the results of the two-1983 harbor seal censes, a description of the shark drift gillnet observation program, the results of radio tagging harbor seals at the Klamath River, and the results of acoustic harassment tests.

Digitized by the Internet Archive
in 2025

https://archive.org/details/administrative-report-lj_1985-02_lj-85-10c

# HARBOR SEAL, PHOCA VITULINA RICHARDSI, CENSUSES IN CALIFORNIA, APRIL AND JUNE, 1983

by

Doyle Hanan, John Scholl, Michael Herder, and Kathy Waldron

## INTRODUCTION AND METHODS

California Department of Fish and Game (DFG) initiated a harbor seal, Phoca vitulina richardsi, census along the mainland California coast in 1981 as part of a cooperative marine mammal assessment program with National Marine Fisheries Service (NMFS). The data gathered from these censuses were to be used for development of an annual index of abundance, which could be used to detect trends in population abundance and distribution. The first census was incomplete but allowed refinement of techniques which have been employed in the subsequent four censuses. Miller (1983) reports those techniques and the results of the two 1982-censuses (conducted in April to identify rookeries and in June to count seals during the peak hauling period).

This report presents results of the two 1983-censuses, which employed Miller's survey techniques as closely as field work permits. Aerial surveys were flown at 600 feet altitude in a Cessna 185 which has an optical glass photography port in the belly of the plane for vertical pictures. The survey team consisted of pilot, recorder, and photographer using a Hasselblad model 500-ELM camera with a 100 mm f3.5 lens and motordrive. Kodak 64 or 200 ASA Ektachrome film was used depending on lighting conditions determined by a Soligor II spotmeter (use of brand names does not imply endorsement by DFG or NMFS). A Nikon 35 mm camera, 100 mm lens, and motordrive were used for backup in case of Hasselblad malfunctions.

In addition to the aerial surveys, several known hauling sites were

surveyed by observers from advantage points on the shore. These observers counted seals each half hour or in the case of large numbers as frequently as conditions permitted. They counted from one hour before to one and a half hours after low tide using binoculars or spotting scopes.

Aerial counts of harbor seals were made by viewing rolls of developed film through dissecting microscopes and marking each counted seal on a thin plastic sheet placed over the frame. Counts were recorded by hauling site number and transferred later to a microcomputer database.

The database includes both aerial and ground count information stored in a separate file for each census. The files were created using the database management program dBASE II (a trademark of Ashron-Tate, 10150 West Jefferson Boulevard, Culver City, California 90230). The files are maintained as individual records for each hauling site along the California coast. Each record contains a number of fields that identify and describe the site, as well as the counts for that site (Table 1).

## RESULTS

### April 16-23, 1983 Census

This survey was to identify harbor seal rookery sites defined as any hauling site where pups were observed. Pup counts were made and are presented but should not be considered for total production estimates, since harbor seals have a prolonged pupping season (March through May) and any one-day survey will miss much of the pup production. There was a temporary malfunction with the Hasselblad camera and the Nikon 35 mm was used to photograph sites from Point San Luis to Yankee Point. Human disturbance was noted at a few sites and may have reduced total counts for those sites, but

those losses should not significantly affect the identification of rookery sites. Weather was generally good with some rain but little fog to obscure sites.

Harbor seals were observed at 221 of the 464 total sites, including 28 sites not occuppied in previous surveys. Pups were seen at 12 sites where previously no pups had been observed and in total at 51 of 93 known California rookery sites (APPENDIX I). A total of 9,298 harbor seals were counted including 660 pups. The counties north of San Francisco Bay had 65% of the total seals counted and 80% of the pups (Table 2).

The distribution of seals and location of rookeries weresimilar to those observed in the April 1982 census (APPENDIX III) although total numbers of seals were less. At this time, the lower counts would have to be attributed to environmental conditions or a decline in population size, because census techniques were essentially the same in both years and human disturbance was similar. Given the El Nino event of 1982/83, it is our feeling that pup production may have been reduced in 1983 due to the El Nino, but the total population level was similar in both years (see next section).

June 16-21, 1983 Census

The objective of the June census was to count harbor seals during the peak hauling period for a population index, which can be used with other indices to detect changes in abundance levels. There were no camera malfunctions during the census, but fog completely restricted visibility from Point Mugu to Morro Bay on the first census day. Fortunately, the fog lifted on the last census day and that section was photographed as the plane flew south on the return trip. Normally the flight path is south to north taking

advantage of the northward movement of the low tide differential.

Harbor seals were observed at 186 of 481 hauling sites of which 17 are new sites. A total of 10,752 seals were counted including 43 pups. A pup count was made for those seals easily identified as pups and those not easily identified as pups were considered adults. As in the previous censuses, counties north of San Francisco Bay had the largest numbers of seals and in this census accounted for 57% of the mainland total (Table 2).

With only two data points (1982 and 1983) for the peak abundance census, one cannot interpret the appreciable drop in the total count (13,026 to 10,752 seals) as a population trend. A more likely explanation is the unusual oceanic conditions caused by the major influx of warm water from the 1983 El Nino. As mentioned above, duplication of census technique should ensure the integrity of this census for comparison to the 1982 census (APPENDIX III) and possibly to detect effects of the El Nino.

The total number of harbor seals counted for California in 1983 must include counts at the southern California islands. Stewart and Yochem (1983) report a 1983 total of 2,665 harbor seals at the northern Channel Islands during late May, the peak island hauling period. Stewart and Yochem (in press) report a peak of 609 harbor seals at San Nicolas Island in 1982. If a 10% growth is assumed at San Nicolas Island, about 670 seals could be expected in 1983. Chuck Oliver, NMFS fishery biologist, estimated 26-36 harbor seals at San Clemente Island and 64-100 at Santa Catalina Island in June 1983 during a periodic aerial survey of those islands (C. Oliver, pers. com.). These three estimates were combined for a 1983 southern California island count of approximately 3,448 seals. This total is less than the Stewart (1982) count of 3,707 seals at these islands but the apparent decline is not as large a decline as observed for the mainland. Again speculation for the decline

centers on the El Nino of 1982/1983.

Combining the island total with the mainland count and assuming little movement between counting areas gives a June 1983 California count of 14,200 harbor seals.

## LITERATURE CITED

Miller, D.J. 1983. Coastal marine mammal study, annual report for the period of July 1, 1981-June 30, 1982. NMFS-SWFC Admin. Rpt. LJ-83-21C.

Stewart, B.S. 1982. Peak 1982 aerial censuses of harbor seal populations on the southern California Channel Islands. Hubbs Seaworld Research Inst. Tech. Rpt. 82-143, 26 July 1982. Final Rpt. submitted to Southwest Fish. Center, La Jolla 7p.

Stewart, B.S. and P.K. Yochem. In press. Distribution and abundance of pinnipeds on San Nicolas Island, California. Bull. So. Calif. Acad. Sci.

Table 1. Harbor Seal Census Database Record Structure

| FIELD # | FIELD NAME | TYPE* | WIDTH | DECIMALS | COMMENTS |
|---|---|---|---|---|---|
| 001 | SITE | C | 005 | | Haul out site # |
| 002 | TYPE | C | 003 | | A = Aerial census of G = Ground Count |
| 003 | LOCATION | C | 030 | | Location of haul out site |
| 004 | COUNTY | C | 003 | | County of site |
| 005 | LATITUDE | C | 007 | | Degrees, minutes, seconds |
| 006 | LONGITUDE | C | 008 | | Degrees, minutes, seconds |
| 007 | DESCR** | C | 001 | | Primary site substrate description |
| 008 | DESCR1 | C | 001 | | Secondary site substrate description |
| 009 | DESCR2 | C | 001 | | Tertiary site substrate description |
| 010 | TIME | C | 009 | | Time of aerial count |
| 011 | LTIDE | N | 005 | 002 | See Miller (1983) |
| 012 | TIDE HT | N | 004 | 002 | Tide height (meters) |
| 013 | FA | N | 003 | | Aerial Adult Count |
| 014 | FP | N | 003 | | Aerial Pup Count |
| 015 | FT | N | 003 | | Aerial Total Count |
| 016 | GA | N | 003 | | Ground Adult Count |
| 017 | GP | N | 003 | | Ground Pup Count |
| 018 | GT | N | 003 | | Ground Total Count |
| 019 | EA | N | 003 | | Estimated Adult Count |
| 020 | EP | N | 003 | | Estimated Pup Count |
| 021 | ET | N | 003 | | Estimated Total Count |
| 022 | MAX | N | 004 | | Maximum count to date for that site |
| 023 | DATE | C | 007 | | Date of Count |
| 024 | ROOKERY | C | 001 | | R = Haulout is also a rookery |
| 025 | PROBLEM *** | C | 001 | | Any problems hindering counts |
| | Total | | 118 | | |

* Type
N = Numeric Field
C = Character Field

** = Description
1 = EXR (extended reef)
2 = OFR (offshore reef)
3 = ONR (onshore rock)
4 = HES (harbor + estuary sand)
5 = OBE (ocean sandy beach)
6 = River logs
7 = Floats
8 = Nite Haul Out
9 = ORB (ocean rocky beach)

*** = Problem
C = camera
D = disturbance

Table 2. Harbor seal totals with the number of sites and occuppied sites county from the April and June mainland censuses. (DN = Del Norte, H = Humboldt, MEN = Mendecino, SON = Sonoma, MAR = Marin, CC = Contra Costa, SF = San Francisco, ALA = Alameda, SM = San Mateo, FARA IS = Faralon Islands, SC = Santa Cruz, SCL = Santa Clara, M = Monterey, SLO = San Luis Obisbo, SB = Santa Barbara, V = Ventura, SD = San Diego.

| | APRIL 1983 | | | | | | JUNE 1983 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COUNTY | ADULTS | PUPS | COMBINED | % OF TOTAL | # SITES | # OCCUPIED | ADULTS | PUPS | COMBINED | % OF TOTAL | # SITES | #OCCUPIED |
| DN | 280 | 68 | 348 | 4 | 11 | 3 | 938 | 0 | 938 | 9 | 14 | 3 |
| H | 1213 | 204 | 1417 | 15 | 45 | 21 | 1391 | 4 | 1395 | 13 | 43 | 14 |
| MEN | 1624 | 94 | 1718 | 18 | 59 | 37 | 1270 | 4 | 1274 | 12 | 61 | 30 |
| SON | 749 | 3 | 752 | 8 | 71 | 33 | 548 | 0 | 548 | 5 | 74 | 19 |
| MAR | 1700 | 157 | 1857 | 20 | 43 | 19 | 1968 | 20 | 1988 | 18 | 15 | 18 |
| CC | 70 | 1 | 71 | 1 | 1 | 1 | 85 | 0 | 85 | 1 | 1 | 1 |
| SF | 8 | 0 | 8 | - | 1 | 1 | 58 | 0 | 58 | 1 | 1 | 1 |
| ALA | 143 | 24 | 167 | 2 | 3 | 2 | 133 | 0 | 133 | 1 | 3 | 3 |
| SM | 496 | 4 | 500 | 5 | 31 | 22 | 594 | 0 | 594 | 6 | 31 | 15 |
| Fara Is | 69 | 0 | 69 | 1 | 1 | 1 | 56 | 0 | 56 | 1 | 1 | 1 |
| SC | 275 | 1 | 276 | 3 | 11 | 7 | 231 | 0 | 231 | 2 | 11 | 6 |
| SCL | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| M | 794 | 34 | 828 | 9 | 76 | 26 | 931 | 6 | 937 | 9 | 77 | 28 |
| SLO | 611 | 22 | 633 | 7 | 86 | 36 | 1145 | 4 | 1149 | 11 | 91 | 34 |
| SB | 522 | 41 | 563 | 6 | 20 | 10 | 1256 | 2 | 1258 | 12 | 22 | 10 |
| V | 60 | 7 | 57 | 1 | 1 | 1 | 92 | 3 | 95 | 1 | 1 | 1 |
| SD | 24 | 0 | 24 | - | 3 | 1 | 13 | 0 | 13 | - | 3 | 1 |
| Totals | 8638 | 660 | 9298 | 100 | 464 | 221 | 10709 | 43 | 10752 | 100 | 481 | 186 |

# SHARK DRIFT GILL NET FISHERY OBSERVATION PROGRAM (May - June, 1983)

Doyle Hanan and John Scholl

The drift gill net (DGN) fishery for pelagic sharks began off Southern California about 1977. By 1979, concern had been raised among fishing interest groups that there was a large incidental catch of non-target fish species in the drift nets, so a state law was enacted requiring a mandatory Department of Fish and Game (DFG) observation program (MOP) and it was initiated in September 1980 and continued through September 1982. The results of this program indicated a large incidental take of California sea lions, Zalophus californianus, 600-1200 annually (Miller et al., 1983). Because DFG and the National Marine Fisheries Service (NMFS) are concerned with the population status of marine mammals interacting with a fishery, it was decided that further research would be conducted to confirm and possibly refine Miller's estimate of incidental take. This is a preliminary report on that research program.

For the MOP research, DFG observers boarded DGN vessels prior to a fishing trip and remained onboard during the entire fishing trip usually lasting 5 to 7 days. For the current observation program, initiated in May 1983, observers board DGN vessels at sea just prior to the net pulling period. The DFG R/V KELP BASS was used to locate fishing DGN vessels and transfer biologists (via skiff) to those vessels. Since net pulling begins anywhere from 0300 to 0600 hours and must be concluded by two hours after sunrise, we tried to locate at least three DGN vessels in relatively close proximity, while the nets still fished. The biologists were transferred after the fishing crew awoke and permission for boarding was obtained from the DGN skipper. We must emphasize that this was an observation program based solely

on the voluntary support of DGN skippers and cooperation was generally good, as observers were allowed aboard most vessels contacted. Once aboard a DGN vessel, observers recorded catch by species, net dimensions, and length measurements of shark species and marine mammals. Dead marine mammals caught in the nets were flipper-tagged with brown temple tags (authorized by MMPA permit no. 380 SWFC) when the DGN skippers permitted. Tagged marine mammals were then tossed overboard in hopes that salvage operations might eventually indicate their drift path and perhaps allow apportionment of the DGN mortality vector in salvaged animals.

A total of 12 DGN vessels was observed during the twenty days at sea in May and June of 1983. Three of the observed vessels had an incidental take of marine mammals (Table 1). The largest number of pinniped entanglements (4) was observed June 9, twelve miles northwest of Point Bennett, San Miguel Island.

Since this fishery season lasts from May through January, we are presenting this information as a preliminary report. The final presentation and analysis of the 1982-83 season will be included in the 1983-84 annual contract report.

Table 1. Shark Drift Gill Nets Observed (FY - 1982 - 83)

| DATE MO/DA | BLOCK | MESH (IN.)/LENGTH (FM.)/DEPTH (MESH) | | | MORTALITY |
|---|---|---|---|---|---|
| 05/16 | 823 | 16 | 930 | 120 | 0 |
| 05/17 | 890 | - | - | - | 0 |
| 05/19 | 706 | - | - | - | 0 |
| 05/19 | 706 | 16 | - | - | 0 |
| 05/19 | 706 | 15.5 | - | - | 1 Z.C. |
| 06/09 | 690 | 14.5/16 | 1000 | 105 | 2 Z.C. |
| | | | | | 2 M.A. |
| 06/11 | 707 | 16/14 | 1000 | 80 | 0 |
| 06/11 | 707 | 16.5 | 1000 | 85 | 1 Z.C. |
| 06/13 | 760 | 10 | 650 | 60 | 0 |
| 06/14 | 708 | 16 | 450 | - | 0 |
| 06/15 | 707 | 18 | 1000 | 40 | 0 |
| 06/28 | 867 | 14.5 | 1000 | - | 0 |

Definitions:

Block - DFG block

Mesh - Stretched mesh, two lengths/observation indicate different mesh sizes used on same net

Mortality - MA = Mirounga angustirostris, ZC = Zalophus californianus

# SEASONAL AND DIURNAL MOVEMENTS OF HARBOR SEALS *PHOCA VITULINA RICHARDSI*, IN THE KLAMATH RIVER, CALIFORNIA

Michael J. Herder*

Harbor seals (*Phoca vitulina richardsi*) are considered nonmigratory, exhibiting local movements associated with tidal fluctuaations, prey abundance, reproductive behavior, and changing seasons (Scheffer and Slipp 1944; Fisher 1952; Biss 1969; Divinyi 1973; Bonner and Whitthames 1974; Boulva and McLaren 1979; Sullivan 1979; Roffe 1980; Brown 1981; Bowby 1982). Additional information regarding hauling site fidelity and the population proportions hauled out by time could enhance the accuracy of instantaneous counts for estimating the total population.

Radiotelemetry studies have been conducted to evaluate site fidelity, and seasonal and diurnal movements of harbor seals at East Anglia, England (Bonner and Whitthames 1974); the Kodiak Islands (Pitcher and McAllister 1981); the southern California Channel Islands (Stewart and Yochem 1983); and the Oregon and Washington coasts (Brown and Mate 1983; Jeffries 1983). Varying degrees of haulout site fidelity have been reported by Divinyi (1973), Knudtson (1974), Reijnders (1976), Boulva and McLaren (1979), Calambokidis (1979), Pitcher and McAllister (1981), and Stewart and Yochem (1983). Localized and long range movements have also been reported (Haaften 1972; Bonner and Whitthames 1974; Wipper 1975; Vaughn 1978; Drescher 1979; Pitcher and McAllister 1981; Brown and Mate 1983; Jeffries 1983; and Stewart and Yochem

* Present address: Pacific Whale Foundation, Kihei, Hawaii 96753

1983). Tagging studies conducted in conjunction with analysis of food habits suggests that seasonal movements may be a response to seasonal prey abundance (Brown and Mate 1983; Jeffries 1983) while localized prey abundance may be responsible for local movements and observed seasonal trends in site fidelity (Roffe 1980; Brown 1981; Miller et al., 1982).

The Klamath River in northern California experiences a high rate of pinniped depredation on salmonids in the spring and summer (Bowlby 1982; Boydstun and Buelna 1982; Hart 1983; Herder 1983). California Department of Fish and Game (DFG) studies indicate depredation rates of over 13% of the fall gill net harvest (Herder 1983) and 12 to 16% of the seine caught salmonids (Hart 1983) during 1981. Year-round censuses at the river mouth show seasonal peaks in harbor seal abundance coincidental during the early spring with runs of lamprey eels (Lampetra tridentata) (Bowlby 1982) and in mid-fall with salmonid runs and decreased fishing activities (Bowlby 1982; Herder 1983).

A one year radiotelemetry study of harbor seals at the Klamath River was conducted to assess hauling site fidelity and to document movements. Hauling patterns, variability in site use, and estimation of the proportion of animals hauling out by time was also analyzed to help clarify aerial census results and allow more accurate estimates from the statewide harbor seal census.

## STUDY AREA

The Klamath River is joined by the Shasta, Scott, Salmon and Trinity Rivers in northern California before draining into the Pacific Ocean. Harbor seals were captured in the Klamath River estuary (lat. 41° 32.7') which is primarily gravel with mud flats over most of the shallow areas. River mouth hauling areas were located on the leeward sides of two sandpits (Figure 1)

where harbor seals hauled out during night and early morning hours.

Radiotelemetry checks from shore stations were conducted over the 40kms of exposed, rocky coastline from the mouth of the Klamath River to Castle Rock near Crescent City (lat. 41° 45.6'). Nine distinct hauling areas totaling fifty or more offshore rocks each measuring less than 20 $m^2$ served as low tide hauling sites for seals in areas away from the river mouth but within a 500 m radius. Two reefs extending from shore were also used as hauling areas by seals as well as a stretch of flat sandy beach (Scat Beach, site 414). On the leeward side of Castle Rock, an island and a series of shoals provided hauling substrate for 200+ harbor seals, 400 to 500 California sea lions (Zalophus californianus), 80+ Steller sea lions (Eumetopias jubatus), and occasionally elephant seals (Mirounga angustirostris). Harbor seals also occupied space with other pinnipeds at Klamath Cove (Site 412). Scat Beach and Two Rocks (Site 413) are the only known rookery sites within the ground survey area. All sites within the ground survey area were isolated from main roads and with the exception of Castle Rock (Site 418) were observable only by trail or air.

Aerial radiotelemetry surveys covered the area from the Eel River, California (lat. 40° 37.5') to Rogue Reef near Gold Beach, Oregon (lat. 42° 27.0') and occasionally as far north as Yaquine Bay, Oregon (lat. 44° 48.8'). Some 100 or more seal hauling areas, generally on the leeward side of protected offshore rocks, served as hauling grounds for seals between Crescent City, California and Gold Beach, Oregon. Harbor seals commonly used three sand spit sites on the Eel River as hauling areas. Four sites on the mud flats of Humboldt Bay near Eureka, California (lat. 40° 47.1°) served as harbor seal rookeries.

# METHODS AND MATERIALS

## Capture and Handling

Harbor seals were captured for tagging between June 8 and October 14, 1982, at three sites in the Klamath River. Seals remaining in the estuary after fishermen disturbed the river mouth hauling areas in the early morning were driven into capture nets using one or more underwater acoustic harassment devices (Miller et al., 1983). The capture nets were 30 m by 6 m deep panels; made of #36 green nylon which measured 25 cm stretched mesh. The floatline was a 1.1 mm, braided polypropylene line with paired floats every other hanging. The leadline was a 0.63 mm braided polypropylene lead core line weighing approximately 0.23 kgs per meter. The panels were laced together with #18 black seine twine for a total length of 100 m. An additional 70 m net fence, 8 m deep, of the same mesh and line specifications as the capture nets was anchored in the river channel. The downriver end of the capture net was attached to a log onshore, with the upriver end tied and laced to the proximal end of the anchored net fence (Figure 2a). The capture nets were loosely set, allowing for a "U" shaped enclosure with a 50 m mouth opening at the upriver end. The anchored net fence was set to extend the mouth of the enclosure to 100 m offshore. A quick release mechanism, constructed of four 2-inch "eye" bolts in a wooden block, allowed the shore team to disconnect the capture net from the lines of the fence net. By breaking the lacing of the mechanism, the shore team could then pull the capture net free (Figure 2b).

A skiff with the submerged transducer of the acoustic harassment device passed as close as possible to the shallow resting area, attempting to drive seals along the bank ahead of the skiff and into the net area. When seals were sighted within the net enclosure, shore observers pulled the quick

release trip line to separate the capture and fence nets. Capture nets were then pulled from the end and center to retrieve captured seals as quickly as possible. The pull lines were attached at the floatline and at two 4.5 kg weights on the leadlines to make the net bag but not pull off the bottom (Figure 2c). When space permitted, a four wheel drive vehicle was used to help pull the nets. Time was critical since some seals were able to escape by swimming towards shore away from the approaching net to turn and jump the floatline. None of the 22 seals captured were entangled in the mesh but pulled ashore in the bag of the net.

Once ashore, seals were removed from the capture nets and held in hoop nets prior to tagging. Hoop nets, similar to those described by Jeffries (1983), were constructed from one meter diameter hoops of 5.2 cm PVC plastic pipe with a 2.5 m base of varying mesh sizes tightly knotted at the cod end. Seals were pulled out of the capture nets by the hind flippers and directed into an open hoop net. Once completely inside, the hoop was twisted two or more full turns, placed back over the animal and staked down. This kept seals tightly confined until tagging procedures could begin.

Four biologists were required to tag each animal. Captured seals were removed from the hoop nets hind flippers first and maneuvered so that they were lying ventral surface down, upon the hoop net and then a biologist stradled the seal to sit on its back. A second biologist tucked the seals foreflippers under the knees of the person stradling the animal, then moved around to hold the hind flippers. Seals were thus immobilized without the use of drugs. Loss of physical control over an animal only meant that it re-entered the hoop net. Once immobilized, seals were tagged by a third biologist and the fourth served as data recorder.

A 3.8 m wooden tripod with block and tackle was used to weigh the seals

within the hoop net on a 136 kg hanging scale. Standard length and girth measurements were recorded whenever possible (Table 1).

Tag Attachment Procedure

Radiotelemetry packages (3.9 cm), consisting of cylindrical transmitters in the 164-166Mhz range powered by twelve-month lithium batteries were used for this study. The radio transmitters and colored vinyl streamers were attached along the mid-dorsal surface between the shoulder blades with five-minute epoxy glue poured into a tag mold containing the tags. A tag mold was constructed of 6 cm lengths from 7.5 cm diameter PVC plastic pipe. All molds were pre-cut halfway down the top to facilitate removal from the tagged seal. Molds used with radiotelemetry packages were notched halfway down from the top to allow the antenna to extend posteriorly. Two 4x18 cm vinyl streamers, color coded for identification of sexes, were sewn onto squares of 3 mm nylon mesh netting which was stretched tightly over the bottom of the mold and positioned to allow roughly 15 cm of streamer material to extend outside the mold.

Pelage in the area of tag attachment was cleaned and degreased with 70% isopropyl alcohol and acetone. The area was blown dry with low pressure air from a SCUBA tank and regulator. The mesh was worked into pelage until tufts of fur pushed up between the meshes and then epoxy was poured into the mold. Tags generally required 60 to 80 grams of five-minute epoxy and ten to fifteen minutes to set up. The anterior edge of the transmitter package was pushed downward into the glue to maintain the antenna at approximately a thirty degree angle above the animal's back. This permitted the tip of the antenna to be above water level when the seal surfaced.

Head tags, resembling a smaller version of the pelage tags, were made

from 3 cm diameter plastic film canisters, 2x6 cm colored vinyl streamers, and the same 3 mm nylon mesh netting used with the pelage tags. Head tags were designed to facilitate identification of seals surfacing in the river. However, concern about the possible effects of the high temperature (120°F) on the seals attained by the hardening epoxy, as well as concern for the researcher's safety, resulted in discontinuance of their use after three seals.

Jumbo roto tags were attached between the second and third interdigit webbing of both hind flippers. Six colors of roto tags were alternated to permit recognition of sexes and individuals. Colored vinyl streamers were pinned between the roto tags and the webbing to further increase visibility.

Ground and Aerial Monitoring

Radiotagged harbor seals were monitored with a TR-2 scanning receiver. Seals used river mouth hauling grounds extensively during night and early morning hours (Bowby 1982); Hart 1983; Herder 1983). These sites were monitored and censused at first light. All other sites were considered low tide hauling areas with maximum usage during afternoon low tides when mild sea conditions prevail (Stewart 1981; Miller et al., 1983) thus they were monitored in the afternoon.

Transmitter signals were strong and continuous when seals were hauled out. Signals became noticeably weaker as tagged animals descended into freshwater and were absent immediately as the animal slipped below the surface in saltwater. Under optimum conditions, signals were detected from as far as seven km by direct line of sight.

Ground radio checks were conducted an average of seven times per month throughout the year; although, severe storms and an extended rainy season

restricted the number of radio checks made from November through May. Observers checked each transmitter frequency for a period of three to five minutes. Harbor seals at each known hauling area from the Klamath River north to Castle Rock were counted before and after radio checks. A Questar seven parabolic reflector telescope, a 20 to 40 power zoom spotting scope, and 7x35 power binoculars were used to observe seals for counts and check for streamer tags.

Weather permitting, aerial radio checks were flown at least once each month from 1.5 hours before to 2.0 hours after non-minus low tides (Miller et al., 1983) at altitudes of 180 m to 200 m. A Cessna 185 supplied by DFG with a Yagi antenna mounted on each wing strut was used to monitor hauling grounds from the Eel River, California to Rogue Reef, Oregon. An observer controlled switch allowed directional location of radio transmitters by receiving signals through either or both antennae. The U.S. Coast Guard provided additional opportunities for aerial radio checks from their search and rescue helicopters. Sighting data and visual estimates of the numbers of seals as well as time and location were recorded. Both vertical (DFG Cessna 185) and oblique (USCG helicopter) photography of hauling sites were employed to help resight tagged seals. A 35 mm SLR camera with an 80 to 300 mm zoom lens was used to photograph hauling grounds according to procedures developed for aerial census of pinniped populations (Johnson and Jeffries 1977; Mate 1977; Everitt and Braham 1980; Miller et al., 1983). Color film (ASA 100 or 200) at aperatures of 1/500 or 1/1000 helped reduce blurring caused by airspeed (95-120 kts, DFG Cessna and 25-90 kts, USCG helicopter).

Sequential Haulout Counts

Site fidelity and diurnal hauling patterns were studied by routinely

counting seals at ten sites from the Klamath River to Castle Rock, California. Observers counted seals and monitored radio tag frequencies at assigned sites, then moved to the next assigned site. All ten hauling areas were monitored and counted during the low tide windows described above. Four low tide series, one in April and three in May, were studied.

## RESULTS

Twenty-two harbor seals were captured and tagged between June 8 and October 14, 1982. All 22 received double plastic flipper tags and colored vinyl streamers. Three seals, which were tagged 3.3 km uprover, were outfitted with head tags which included a colored streamer. The remaining 19 animals were captured and tagged at the river mouth. None of these seals received head tags. Pelage attached radio transmitters were mounted on 12 harbor seals.

Three weeks after tagging, one of the radio tagged seals (TR-556) became entangled in a salmon gill-net and drowned. The pelage tag which was still firmly anchored to the animals back was cut away and the transmitter was subsequently used to tag another seal. Three weeks after the telemetry package was remounted that seal was resighted with the pelage tag intact but not transmitting. One other seal (TR-722) lost a radiotelemetry package and was identified from hind flipper streamers with only remnants of epoxy glue where the pelage tag had been applied to its back.

Sixteen of the captured seals were male (73%) and six were female (27%). Among those tagged, ten were adults (45%), eleven were subadults (50%), and one (5%) was a pup of the year (Table 2).

Site Fidelity and Movement Patterns

All 12 radio tagged seals were resighted at least once during the study period - August 31, 1982 to August 4, 1983. Eleven of those resighted used at least one hauling ground other than the river mouth. Four seals used three sites and two seals used four or more different sites. During the study, 37 movements to hauling sites other than the river mouth were detected (Table 3).

Distances of travel to alternate hauling areas ranging from two to twenty km were defined as short range or local movements. Five seals consistently resighted within 30 km of the tagging site were considered resident animals. Over 86% of their recorded movements were made between the river mouth and one other hauling site.

Long range movements, thought to be dispersal, were noted for two seals. One, a subadult female (TR-585), traveled over 300 km to Alesa Bay, Oregon, where she was resighted in mid-January (Peter Stoel, California State University, San Francisco, pers. comm.) and the other, a subadult male (TR-622), was resighted more than 150 km north of the tagging site in the water 2 km north of Rogue Reef, Oregon.

Tagged harbor seals exhibited strong seasonal movement with regard to pupping and breeding activities, and possibly may have moved in response to the presence prey species. Prior to the completion of the fall salmonid runs (November), ten seals were consistently resighted within 2 km of the Klamath River mouth. From October through December 1982, tagged seals were resighted an average of 33.6% of the observation days. During this period, site fidelity at the river mouth and within 10 km of the river mouth was high. Two seals resighted on Castle Rock (site 418) in mid-December may have moved there in response to the presence of Pacific herring (Clupea harensus) in the nearby harbor of Crescent City however, both seals later returned to the Klamath

River. An adult female (TR-596), was resighted the first week of pupping season (March through May) at a known rookery site 18 km north of the tagging site. The other, a large subadult male (TR-668) was sighted 80 km south of the river at a known rookery prior to returning to the river in June.

From January through March, 1983, resightings dropped to an average of 0.7% of the monitored days. Eight tagged seals, including the two that made long range dispersals, moved from the river mouth after November 1, 1982. Two seals may have initiated moves as early as mid-September and the two other tagged seals were never resighted after December 9, 1982. Resighting frequency increased to an average of 14.0% of the monitored days from April through June, 1983 and then declined to an average resighting frequency of 11.0% from July through August, 1983 probably due to the transmitter loss with moulting. The average resighting frequency was 16.4% of monitored days by pooling with the previous year.

Seasonal movements and dispersals were more common during the fall and winter months than either the spring or the summer. Five of the six recorded long range seasonal movements were initiated between November and March. The remaining seasonal movement was that of a large subadult male (TR-668) returning to the river from a rookery area in June (Table 4).

Local movements were common throughout the year but increased greatly during the spring months with the five resident seals exhibiting considerable site fidelity during this period, traveling from alternate hauling areas to be resighted foraging at the river mouth 17 times from April through June. This comprised 59% of all local movements observed. Three short range movements (10%) were recorded for the fall and winter months and six (21%) were detected during the summer.

Subadult seals exhibited a greater propensity for seasonal movements and

dispersals than adult animals. Subadult seals made six of the seven seasonal moves recorded. The ratio of local moves made by adults to those by subadults approached unity. Differences in the types of movements made by males and females did not differ from expected values based on the sex ratio of tagged animals (Table 4).

Proportion Hauling Out

The five resident seals remaining in the study area during April and May were closely monitored to determine the proportion of tagged seals hauled out at a given time. One of these, TR-722, was resighted without the radio transmitter and was repeatedly observed based on the colors of the hind flipper streamers. The five seals were observed on three of the eight sites monitored from the Klamath River mouth to Castle Rock, Crescent City (sites 409 through 418). Behavioral data indicate these animals were traveling to the river mouth to forage at least twice each week and then returned to the same hauling areas. Seals generally foraged in the river channel on anadramous lamprey eels at high tide and then returned to specific low tide hauling areas or remained in the river-mouth vicinity until dark to haul out on the sand spits. Two low tide hauling areas, Two Rocks (site 415) and Scat Beach (site 417), were consistently used by tagged seals. Seals using these sites were also often detected at river-mouth hauling sites.

Based upon resightings, tagged seals hauled out an average of 56.0% of the days in April ($\pm$35.8% S.E.) and 61.8% of the days in May ($\pm$21.7% S.E.). The frequency with which tagged females hauled out (43.7%) does not differ significantly (Assuming the same S.E. as the males) from that of tagged males (49.8, 3.6% S.E.). Estimates of the proportion of tagged seals hauling out are based upon methods described by Stewart and Yochem (1983). The proportion

of radio tagged seals present each day was averaged over the sample period. A minimum of 56.1% ±2.8% (S.E.) in April and 65.1 ±12.8% (S.E.) in May of the regional tagged seal population hauled out each day. The proportion of tagged animals hauled out in April is not significantly different from that of May ($t=0.72$, $p<0.1$).

## DISCUSSION

### Movements and Site Fidelity

The degree of hauling site fidelity among harbor seals is subjective, variable, and difficult to quantify. The propensity for movement varies among individuals of different sex and age groups and appears to change in response to seasonal prey abundance and weather patterns (Roffe 1980; Pitcher and McAllister 1981; Brown 1981; Bowlby 1982; Brown and Mate 1983; Jeffries 1983; and Stewart and Yochem 1983). Observations of recognizable individuals returning to the same hauling areas day after day have been reported by Knudtson (1974), Reijnders (1976), Boulva and McLaren (1979), Sullivan (1979), and Stewart and Yochem (1973).

Harbor seals tagged at the Klamath River exhibited considerable site fidelity during the fall at the mouth of the river, and again in the spring at two hauling areas within 10 km to the north. Foraging excursions to the river from those sites, Two Rocks (site 415) and Scat Beach (site 417), were common during spring and summer months. Increasing human activity on the river and space availability on the rookery areas are likely causes of the early spring shift to alternate hauling grounds.

The majority of observed movements originated during the late fall and early winter months. Additionally, the shorter days and inclement weather may

decrease the number of seals hauling out as reported in Washington (Johnson and Jeffries 1977; Jeffries 1983), Oregon (Roffe 1980; Brown 1981; Brown and Mate 1983), and California (Herder 1983; Stewart and Yochem 1983). Jeffries (1983) documented movements of tagged harbor seals into the Columbia River in response to the winter abundance of eulachon (Thaleichthys pacificus). Seasonal and local movements in response to changes in prey abundance have been reported by Roffe (1980), Brown (1981), Bowlby (1982), Brown and Mate (1983), and Jeffries (1983).

Inclement weather conditions and low prey abundance near the Klamath River in December and January may necessitate foraging farther from preferred hauling areas. Winter counts of harbor seals hauling out on Castle Rock (site 418) where two tagged seals were resighted, 29 km north of the Klamath, peak in December and January and fall off again by April. This divergence from the usual low winter abundance observed elsewhere may indicate an aggregation of seals to coincide with large runs of herring spawning in Crescent City's harbor. Herring gill-netters reported over $2,400 damage in lost revenue and equipment due to pinniped depredation in Crescent City harbor in 1981 (Miller et al., 1983).

Harbor seal counts in non-rookery areas remained at low levels throughout the pupping and breeding season and peaked during the moult. One tagged subadult was observed in April at a rookery area in Humboldt Bay near Eureka, California and was resighted at the Klamath River in June. The same animal was observed, partially moulted, in July less than 2 km from the river mouth.

The dispersal of harbor seals, particularly juveniles, has been widely documented (Mansfield 1967; Divinyi 1971; Haaften 1972; Bonner and Whitthames 1984; Wipper 1975; Vaughn 1978; Drescher 1979; and Pitcher and McAllister 1981). Two of the seals tagged in this study traveled over 100 km to new

hauling areas and were not resighted near the Klamath. Two other subadult seals were last observed at the mouth of the Klamath River in December and not resighted during the study.

The proportion of the harbor seal population hauling out each day in the Klamath area averaged 56.1 ±2.8% (S.E.) in April and 65.1 ±12.8% (S.E.) based on all resightings of tagged animals. Pitcher and McAllister (1981) estimated that the average number of seals hauling out each day from June through September at 35 to 60% of the population. Stewart and Yochem (1983) reported a minimum of 58 ±4% (S.E.), 54 ±14% (S.E.) and 41 ±10% (S.E.) of the San Nicolas Island harbor seal population hauled out each day in May, June and July respectively. These are consistent with results obtained at the Klamath River.

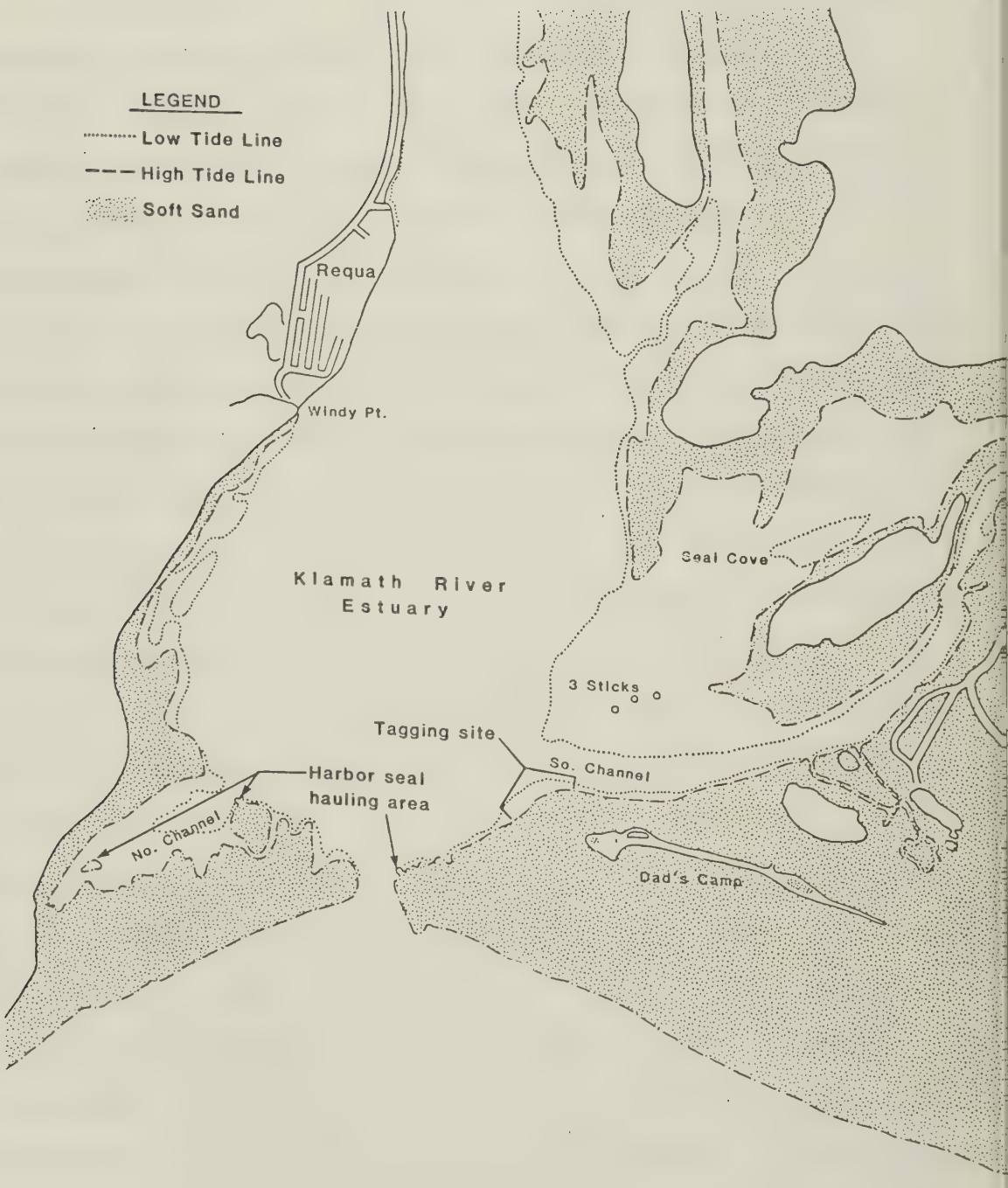


Figure 1. Mouth of Klamath River and harbor seal hauling areas.

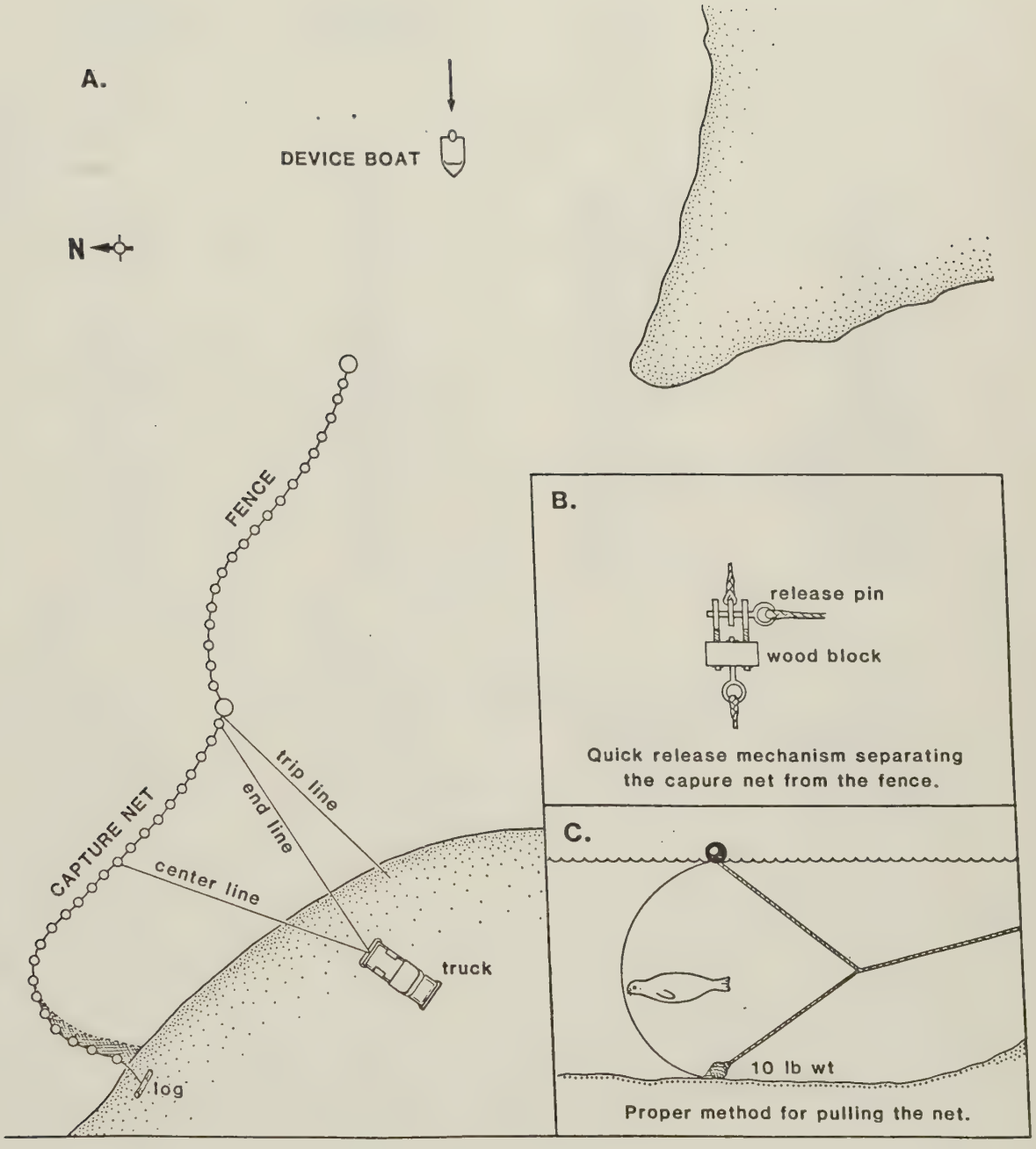


Figure 2. A. Net lay fur capturing harbor seals.
B. Quick release mechanism to separate the capture net from the fence.
C. Net pulling method.

Table 1. Standard length, girth and weights of 17 harbor seals tagged at the Klamath River, 1982.

| AGE CLASS | TAG NO. | STANDARD LENGTH (CM) | AUXILLARY GIRTH (CM) | WEIGHT (KG) |
|---|---|---|---|---|
| | | MALES | | |
| Adult | FT 189 | 136 | 107 | 86.2 |
| Adult | RT 656 | 138 | 106 | 64 |
| Adult | RT 622 | 164 | 126 | 111 |
| Adult | RT 634 | 135 | - | 70 |
| Adult | RT 579 | 134 | 107 | 68 |
| Adult | RT 556 | 152 | 128 | 109 |
| Adult | FT 945 | 150 | 105.5 | 78 |
| Adult | FT 956 | 145 | 103 | 71 |
| Sub-Adult | FT 151 | 139 | - | - |
| Sub-Adult | FT 126 | 123 | 104 | 51.6 |
| Sub-Adult | RT 610 | 114 | 88 | - |
| Sub-Adult | RT 668 | 140 | 61.5 | 49 |
| Sub-Adult | RT 720 | 114 | 100 | 59 |
| Pup | RT 703 | 106 | 85 | 34 |
| | | FEMALES | | |
| Adult | RT 596 | 136 | 100 | 71 |
| Sub-Adult | RT 556 | 128 | 89.7 | 52.5 |
| Sub-Adult | RT 585 | 135 | 91.5 | - |
| Sub-Adult | RT 601 | 124 | 83.5 | - |

Table 2. Sex and age composition and tag application of 22 harbor seals tagged at the Klamath River, 1982.

| | SEX AND AGE COMPOSITION | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | MALES | | | | FEMALES | | | |
| | Adult | Sub-adult and Juvenile | Pup | Total | Adult | Sub-adult and Juvenile | Pup | Total |
| Radio tagged | 5 | 2 | 1 | 8 | 1 | 1 | 0 | 2 |
| Head tagged and radio tagged | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 |
| Pelage streamer/flipper tags only | 4 | 5 | 0 | 9 | 0 | 0 | 0 | 0 |
| Totals | 9 | 8 | 1 | 18 | 1 | 3 | 0 | 4 |

Table 3. Types of movements made by tagged harbor seals by season of the year.

| | | TYPES OF MOVEMENTS | | |
|---|---|---|---|---|
| Number of Moves During Period: | | DISPERSAL | SEASONAL | LOCAL |
| Season | | | | |
| Fall | Oct-Dec | 1 | 3 | 3 |
| Winter | Jan-March | 2 | 3 | 3 |
| Spring | April-June | 0 | 1 | 16 |
| Summer | July-Sept | 0 | 0 | 5 |

Table 4. Types of movements made by seals by sex and age class.

| | | DISPERSAL | SEASONAL | LOCAL |
|---|---|---|---|---|
| Adult | (10) | 1 | 1 | 12 |
| Sub-adult | (11) | 2 | 4 | 11 |
| Pup | (1) | 0 | 2 | 0 |
| Total | | 3 | 7 | 23 |
| Males | (8) | 1 | 1 | 7 |
| Females | (3) | 1 | 6 | 16 |
| Total | | 2 | 7 | 23 |

## LITERATURE CITED

Bigg, M.A. 1969. The harbor seal in British Columbia. Fish. Res. Board Can., Bull. 172, 33 pp.

Bonner, W.N. and S.R. Whitthames. 1974. Dispersal of common seals (Phoca vitulina), tagged in the Wash, East Anglia. J. Zool. (Lond.) 174: 528-531.

Boulva, J. and I.A. McLaren. 1979. Biology of the harbor seal, Phoca vitulina, in Eastern Canada Bull. Fish. Res. Board Can. 200: 1-24.

Bowlby, C.E. 1981. Feeding behavior of pinnipeds in the Klamath River, northern California. M.A. Thesis, Humboldt State University, Arcata, Calif., 74 pp.

Boydstun, L.B. and E. Buelna. 1981. Observations of harbor seals (Phoca vitulina) preying on seine related salmonids in the lower Klamath River, 1980 season. Calif. Dept. Fish and Game Report. Unpubl. 9pp.

Brown, R.F. 1981. Abundance, movements and feeding habits of the harbor seal, Phoca vitulina, at Netart's Bay, Oregon. MS Thesis, Oregon State Univ., Corvalis, OR 69 pp.

Brown, R.F. and B.R. Mate. 1983. Abundance, movements, and feeding habits of harbor seals, Phoca vitulina, at Netarts and Tillamook Bays, Oregon. Fish. Bull. 81(2): 291-301.

Calambokidis, J.A., R.D. Everitt, J.C. Cubbage, and S.D. Carter. 1979. Harbor seal census for the inland waters of Washington, 1977-1978. Murrelet 60:110-112.

DeMaster, D.P., D.J. Miller, D. Goodman, R.L. DeLong, and B.S. Stewart. 1982. Assessment of California sea lion/fishery interactions. Pgs 254-264 In: Trans. North Amer. Wildlife Nat. Res. Conf. 47 Wildlife Management Institute, Washington, D.C.

Divinyi, C.A. 1973. Growth and movements of a known age harbor seal. J. Mammal 53: 824.

Drescher, N.E. 1979. Present status of the harbor seal Phoca vitulina in the German Bight (North Sea). Meeresforsch 27:27-34.

Everitt, R.D. and H.W. Braham. 1980. Aerial survey of Pacific harbor seals in the southeastern Bering Sea. NW Science 54(4): 281-288.

Fisher, H.D. 1952. The status of the harbor seal in British Columbia with particular reference to the Skeena River. Bull. Fish. Res. Board Can. 93:58 pp.

Haaften, J.L. 1972. The cause of fluctuations in the seal population (Phoca vitulina) in the Dutch coastal waters. Int. Council Explor. Sea CM 11:1-4.

Hart, C.J. 1983. In press. 1981 and 1982 predation on tagged salmonids by harbor seals (Phoca vitulina) in the Klamath River, California. Calif. Dept. Fish and Game, Adadromous Fisheries Branch. Unpubl. 30 pp.

Herder, M.J. 1983. Pinniped fishery interactions in the Klamath River system, July 1979 to October 1980. National Marine Fisheries Service, SWFC, Admin. Rpt. (LJ-83-12C). 71 pp.

Jeffries, S.J. 1983. Seasonal movement patterns and population trends for harbor seals (Phoca vitulina richardsi) in the Columbia River and adjacent waters. Report to U.S. Marine Mammal Commission. No. MM2079357-5. 39pp.

Johnson, M.L. and S.J. Jeffries. 1977. Population evaluation of the harbor seal (Phoca vitulina richardsi) in the waters of the state of Washington. Report to U.S. Marine Mammal Commission, NTIS No. PB270376, Springfield, VA. 29pp.

Johnson, D. and L. Sipperstein. 1979. Observations on the behavior of the harbor seal (Phoca vitulina richardsi) at Hopkins Marine Station. Hopkins Marine Station, Monterey, CA. unpubl. 22 pp.

Knudtson, P.M. 1974. Mother-pup behavior within a pupping colony of harbor seals (Phoca vitulina richardsi) in Humboldt Bay, CA. MS Thesis, Humboldt State Univ., Arcata, CA. 42 pp.

Mate, B.R. 1977. Aerial censusing of pinnipeds in the eastern Pacific for assessment of population numbers, migratory distribution, rookery stability effort, and recruitment. Report to U.S. Marine Mammal Commission, NTIS No. PB265859, Springfield, VA. 67 pp.

Miller, D.J., M.J. Herder, and J.P. Scholl. 1983. California marine mammal fishery interactions study, 1979-1981. Nat. Mar. Fish. Serv., SWFC, Admin. Rpt. LJ-83-13C. 233 pp.

Miller, D.J., M.J. Herder, J.P. Scholl, and P. Law. 1983. Harbor seal, Phoca vitulina, censuses in California, 1981 and 1982. Pgs 2-43. In Coastal Marine Mammal Study, annual report for the period of July 1, 1981-June 30, 1982 by D.J. Miller. Nat. Mar. Fish. Serv., SWFC. Admin Rpt 81-ABC-00182. 130 pp.

Pitcher, K.W. and D.C. McAllister. 1981. Movements and haulout behavior of radio-tagged harbor seals, Phoca vitulina. Can. Field Nat. 94(3): 292-297.

Reijnders, P.J.H. 1976. The harbor seal (Phoca vitulina) population in the Dutch Wadden Sea: size and composition. Netherlands J. of Sea Research 10: 223-235.

Roffe, T.J. 1981. Population, food habits, and behavior of pinnipeds in the Rogue River and their relation to salmonid runs. PhD Thesis, Oregon State Univ., Corvallis, OR. 155 pp.

Scheffer, V.B. and J.W. Slipp. 1944. The harbor seal in Washington state. Am. Midl. Nat. 32: 373-416.

Stewart, B.S. 1981. Seasonal abundance, distribution, and ecology of the harbor seal (Phoca vitulina richardsi) on San Miguel Island, California. MS Thesis. San Diego State Univ., San Diego, CA. 66 pp.

Stewart, B.S. and P.K. Yochem. 1983. Radiotelemetry studies of hauling patterns, movements, and site fidelity of harbor seals (Phoca vitulina richardsi) at San Nicolas and San Miguel Islands, California, 1982. Final report to National Marine Fisheries Service, SWFC. HSWRI Technical Report No. 83-152. Unpubl. 18 pp.

Sullivan, R.M. 1979. Behavior and ecology of harbor seals, Phoca vitulina, along the open coast of northern California. MS Thesis. Humboldt State Univ., Arcata, CA 115 pp.

Vaughn, R.W. 1978. A study of common seals in the Wash. Mammal Rev. 8: 25-34.

Wipper, E. 1975. Jahreszeitliche Wanderungenbei Seehunden. Natur. U Museum 105: 346-350.

# ACOUSTIC HARASSMENT TESTING IN THE SAN FRANCISCO BAY PACIFIC HERRING, CLUPEA HARENGUS, GILL NET AND PURSE SEINE FISHERIES

Doyle Hanan and John Scholl

National Marine Fisheries Service and California Department of Fish and Game are testing nonlethal methods of preventing marine mammal/fishery conflicts to reduce marine mammal mortality and the loss of caught fish. Spawning Pacific herring, Clupea harengus, are taken by gill net and round haul gear in San Francisco Bay and several other large bays in Northern California during the winter months. California sea lions, Zalophus californianus, and Pacific harbor seals, Phoca vitulina richardsi, have been observed to interact with these fisheries (Miller et al., 1983). In 1980, Miller estimated that pinnipeds in San Francisco Bay removed an estimated 44,000 lbs. of Pacific herring from gill nets and 28,000 lbs. of Pacific herring from pursing roundhaul nets.

Two underwater acoustic harassment devices (AHD), developed by Dr. Bruce Mate of Oregon State University (Miller 1983), were tested in the Pacific herring fisheries of San Francisco Bay. The sound emitted by these AHD's (one at 12 kilohertz (kHz) and one at 17 kHz) is within the hearing range of pinnipeds and shows some promise of driving pinnipeds away from fishing vessels. Crackershells (CS), which are (similar to a fire cracker but fired from a shotgun, were also tested in hope that they might startle and drive the sea lions away or have a synergistic effect with the AHD to drive sea lions away.

The tests were conducted on February 15-16, 1983 aboard the R/V Pandalus using the 12 kHz or 17 kHz AHD's and crackershells in an attempt to keep pinnipeds away from commercial fishing gill nets. AHD was used within 15 to 20

meters of the gill nets, when pinnipeds were observed foraging and the fishing vessel operator was advised of the intended research. All pinnipeds observed during these tests were California sea lions foraging at the end of the net farthest from the fishing vessel. Harassment was conducted from the R/V Pandalus as close to foraging animals as possible and the AHD was operated between 30 and 60 seconds in a random pulse mode during each harassment. Both adult male (AM) and non-adult male (NAM) sea lions reacted to the first pulse of the 12 kHz AHD with an immediate dive response. Subsequently, a few NAM were observed leaving the area swimming on the surface. Each time the device was turned off, AM were observationed near the middle of the net (between the R/V Pandalus and the fishing vessel) within a few minutes.

When testing with the 12 kHz and 17 kHz simultaneously on AM, an immediate dive response was observed and followed by recurrent sightings in the net vicinity. Surface duration, however, was obviously shortened and dive periods seemed to be extended.

There were only a few occasions when CS could be used safely because of the close proximity of fishing vessels. One of those tests followed by a 30 second AHD pulse produced the best results, since there were no further sea lion sightings for the remainder of the net pull (approx. 15 minutes).

Three roundhaul sets were observed on February 17 aboard a commercial herring purse seine vessel. The 17 kHz AHD was used with CS to move sea lions out of the pursed net, while the herring were being concentrated for brailing. During the first two sets, CS were exploded at center net whenever an animal surfaced and then the AHD was turned on for 30 seconds. During each of the first two sets, at least one sea lion stayed in the net after AHD harassment. When brailing began, a special effort was required by the fishermen to get the animal out. During the third set, about ten CS were

exploded as close to the individual sea lions as possible, and followed by a 30 second AHD pulse. All seven animals were cleared and kept out of the net until after the herring had been brailed. These tests show that sea lions respond, at least initially, to acoustic harassment. They show that sea lions can be driven away from fishing operations, especially when AHD is combined with the use of crackershells. Because of the short duration of the tests, we do not know if these responses will be long term or lasting and would recommend additional testing in these fisheries.

# LITERATURE CITED

Miller, D.J. 1983. Coastal Marine Mammal Study, annual report for the period of July 1, 1981-June 30, 1982. U.S. Nat. Mar. Fish. Serv. SWFC, Admin Rpt. LJ-83-21c. 130p.

Miller, D.J., M.J. Herder, and J.P. Scholl. 1983. California Marine Mammal Fishery interaction study, 1979-1981. U.S. Nat. Mar. Fish. Serv., SWFC, Admin. Rpt. LJ-83-13c. 233p.

# ACOUSTIC HARASSMENT TESTING WITH THE KLAMATH RIVER SALMON FISHERY

Doyle Hanan and John Scholl

During September 1982, two days of acoustic work were conducted on the Klamath River in conjunction with the California Department of Fish and Game's salmon seine and tag operations. Harbor seals, Phoca vitulina, are suspected of seeking out tagged salmon that are perhaps more vulnerable to seal predation after tagging. A 12 kHz acoustic harassment device (AHD) was used to herd harbor seals downstream of the seining site in an attempt to eliminate predation on tagged salmon.

Acoustic work was conducted each day after seining operations had begun and harbor seals were observed in the vicinity of the seining site. An observer on a cliff overlook stayed in radio contact with the skiff carrying the AHD and relayed sightings of seals. When a seal was sighted, the skiff swept downriver in an S-shaped pattern, starting well above the seine site and continuing to a designated anchor point below the seine site. The skiff was then anchored and the AHD operated continuously to produce an acoustic barrier throughout the remainder of the tagging operation. Cliff observation for seals moving upriver of the acoustic barrier continued.

At least four harbor seals were observed in the vicinity of the seine site on the first day. The AHD was used in an attempt to move these animals down river. At the end of the first sweep, one seal with dark pelage remained upriver of the area swept. Two more sweeps of the seine vicinity were required to move this animal downriver. When this was accomplished, the group of animals was kept downriver of the designated anchor site for a period of three hours as verified by the cliff observer.

The anchor site was located at midriver approximately 200 meters below the

seine site at midriver (Fig. 1). The main river channel was on the south side of the skiff and there was a shallow sand bar between the skiff and the north shore at low tide. All observed attempts by the seals to bypass the activated AHD were made between the sand bar and the north shore. Two of the seals attempting to move past the skiff in this manner were observed frequently looking in the direction of the skiff and then turning back when reaching the end of the sand bar just upriver of the skiff. No salmon were observed eaten during the testing period. The AHD was turned off about 1430 hours and at 1445 hours three seals were observed back in the vicinity of the seine site.

On the second day, an initial sweep of the seining vicinity moved four seals downriver to the anchor location. Within 15 minutes, a fifth seal, not previously sited, was observed in the seining vicinity. Several sweeps to move this animal downriver were attempted with no success so the skiff was reanchored at the same anchor sight with four seals observed downriver. Sometime later, a seal with dark pelage moved upriver past the sound barrier to join the seal that had avoided herding and the two seals were each observed eating a salmon near the seining site during this test period.

From this test, we might conclude that the AHD used without any other type of harassment is only moderately successful with harbor seals in a river situation. Because there were only two test days and a minimum of nine seals, we do not feel that this was a conclusive test and recommend additional testing in this type of environment.

# EFFECTS OF CRACKERSHELLS ON CALIFORNIA SEA LIONS, ZALOPHUS CALIFORNIANUS, INTERACTING WITH THE SOUTHERN CALIFORNIA PARTYBOAT FISHERY

John Scholl and Doyle Hanan

Two species of marine mammals interact with the southern California commercial passenger fishing vessels (partyboats) (Miller et al., 1983). They are California sea lions, Zalophus californianus, and in some cases Pacific harbor seals, Phoca vitulina richardsi, which have been observed to remove bait and hooked fish from fishing lines. Partyboat skippers also complain that the presence of California sea lions causes the number of fish being caught to drop off or stop completely. Miller estimated in 1980 that sea lions removed 11,812 hooked Pacific bonito (78% of the total loss) and large numbers of several other fish species from partyboat fishing lines.

The California Department of Fish and Game (DFG) and the National Marine Fisheries Service (NMFS) are both interested in nonlethal methods of controlling marine mammals to reduce or eliminate their interaction with fisheries. This report reviews the use of a small explosive charge called a crackershell as a potential method of keeping marine mammals away from fishing vessels.

## METHODOLOGY

Two types of crackershells (CS) were used in this research. Originally designed to scare birds away from farm crops, the first type was a small explosive shell fired from a 12 gauge shotgun. The shell explodes in the air or on the water surface and has a range of 50 to 75 meters depending on wind conditions. The objective of this explosive is to startle and scare the marine mammal away from the fishing area. The second type of CS is fired from a 6 mm

pistol using a blank cartridge. The pistol is less obtrusive allowing the skipper to carry it in a pocket; however, it is not as accurate as the shotgun type and has only a 25 m range. A propelled whistling rocket was also tested but proved to be unreliable due to its unpredictable flight path.

Since San Diego based partyboats have the highest sea lion interaction rate in California (Miller et al., 1983), 76% of our sampling effort was concentrated off San Diego and the remainder on partyboats out of the Long Beach and Dana Point landings. Trips aboard partyboats reporting marine mammal interactions were prearranged by phone. The observer carried all necessary CS equipment aboard each fishing vessel and skippers were asked to announce to the passengers the planned use of the CS. The skippers were further instructed in the use of the CS and asked to fire the CS during all marine mammal interactions. The observer monitored total fish caught, fishing time at each location, and all sea lion sightings even if no interactions occurred. After fishing trips with marine mammal interactions and if CS had been used, public opinion surveys were conducted to evaluate acceptance of CS.

## RESULTS

A total of 29 partyboat trips were sampled during 1982-83 (Table 1). In general, skipper cooperation was good but during two sampling trips, the skippers seemed to avoid using CS unless specifically asked to do so. One skipper in San Diego refused to allow CS to be used aboard his vessel although the observer had already been permitted aboard and had assumed that the skipper would cooperate. That skipper claimed he had previously tested the shells and felt that they were ineffective. A skipper from the Los Angeles area reported using CS, acquired from a source other than the DFG, and claimed that the shells were dangerous. He based this conclusion on his own personal test when

a CS exploded next to fishermen on deck.

Most of the testing was conducted in May and July although, the greatest number of interactions per trip were recorded in May and August. During CS testing, San Diego boats had the highest catch rate with a mean of 1.69 fish per hook (n=22); while all other areas combined had a mean of 1.00 fish per hook hours (n=7). No significant correlation (R =0.18) was found between number of fish caught per hook hour (fishing success) and the number of sea lion sightings within 100 meters of the vessel (Figure 1).

The mean resighting time for a sea lion within 100 m of the partyboat following a CS explosion was 7.5 minutes (n=56). If CS's are defined to be effective when there were no sea lion sightings within 100 m of the vessel for 15 minutes or longer following the explosion, then it was effective 27% (n=85) of the time. However, as the effectiveness of CS increased, fishing success did not increase (Figure 1). Furthermore, as the number of CS used per trip increased, the number of effective shots did not necessarily increase (Figure 2) perhaps indicating a skill vector in the skipper's use of CS's or some individual tolerances to CS by sea lions. Nearness of the explosion to the animal is another variable likely to determine the effectiveness of CS or perhaps the shooting skill of the skipper, but our sample size for this variable is small (Figure 2). Although difficult to quantify, the opinion of our staff is that adult males, especially large adult males, seemed less influenced or even oblivious to the effect of the CS explosion.

Public acceptance of CS appears to be nearly unanimous with 95% (n=97) of those surveyed condoning it (Table 2). A majority (75%) of the surveyed group also felt some control was needed and that the device would be acceptable on a regular basis. There were no obvious relationships between opinion survey results and either fishing success or the number of CS used per trip. Catch

composition (Table 1) does not appear to be related to sea lion interactions except that interactions averaged 20.6 per trip when yellowtail (Seriola dorsalis) was a catch component and 14.4 per trip when Pacific mackerel (Scomber japonicus) was a catch component. The overall mean was 10.6 (n=29) sea lion sightings per trip and Pacific mackerel was the top fish species caught during the sampling trips.

## DISCUSSION

Although the CS is presently considered to be effective on a limited basis, the following points need consideration: 1) it is nonlethal and currently the partyboat skippers have no legal recourse when harassed by sea lions but to move their vessel; 2) as skippers become more proficient with the CS, the effectiveness of the device may improve and; 3) the user public would accept CS right now.

In most circumstances, CS does not appear capable of reducing interactions with partyboats for a reasonable amount of time and the number of shells needed to harass animals effectively does not seem to be economically feasible. CS harassment coordinated with other non-lethal devices such as underwater acoustic sound harassment may be effective. Since only limited acoustic harassment research has been conducted at this time, we recommend additional testing of CS and acoustic harassment devices.

## LITERATURE CITED

Miller, D.J., M.J. Herder and J.P. Scholl. 1983. California marine mammal fishery interaction study, 1979-1981. U.S. Nat. Mar. Fish. Serv., SWFC, Admin. Rpt. LJ-83-13C. 233p.

# TABLE 1

| Date & Location | Total fish caught/ hook hour | Top 3 species caught in order* | No. stops | Sightings within 100 m of fishing vessel | Cracker-shells shot | Mean distance C.S. explodes from ZC (meters) | No. of C.S. effective* |
|---|---|---|---|---|---|---|---|
| 5-16-82 S.B. Isl. | 0.17 | RF sculpin SH | 5 | 18 | 10 | 25.8 m (6) | 1 |
| 5-18-82 San Diego | 1.41 | barracuda KB PM | 2 | 24 | 3 | N/A | 1 |
| 5-25-82 San Diego | 2.01 | KB barracuda BSB | 1 | 0 | 0 | 0 | - |
| 5-26-82 Long Beach | 0.42 | KB PM BSB | 2 | 32 | 4 | 6.0 m (2) | 3 |
| 5-27-82 Catalina | 2.59 | PM KB bonito | 4 | 13 | 2 | 10 m (1) | 1 |
| 5-28-82 San Diego | 0.44 | KB barracuda sculpin | 5 | 27 | 18 | 36.4 m (5) | 2 |
| 6-12-82 Long Beach | 0.83 | halfmoon KB RF | 1 | 2 | 2 | N/A | 2 |
| 6-25-82 San Diego | 4.71 | PM BSB RF | 3 | 4 | 2 | N/A | 0 |
| 6-29-82 San Diego | 1.01 | KB PM RF | 3 | 7 | 10 | 25 m (1) | 2 |
| 6-30-82 San Diego | 2.26 | PM barracuda -- | 3 | 5 | 4 | N/A | 0 |
| 7-1-82 San Diego | 4.94 | PM barracuda RF | 4 | 0 | 0 | 0 | - |
| 7-6-82 San Diego | 2.11 | PM RF BSB | 3 | 0 | 0 | 0 | - |
| 7-8-82 San Diego | 2.01 | bonito BSB PM | 1 | 0 | 0 | 0 | - |
| 7-13-82 San Diego | 2.22 | PM RF barracuda | 3 | 3 | 4 | N/A | 2 |
| 7-19-82 Long Beach | 0.21 | PM KB halfmoon | 1 | 1 | 0 | 0 | - |
| 7-22-82 San Diego | 1.60 | PM KB BSB | 3 | 0 | 0 | 0 | - |
| 7-22-82 San Diego | 0.38 | KB PM bonito | 3 | 2 | 2 | N/A | 1 |
| 8-5-82 San Diego | 2.01 | PM KB bonito | 2 | 16 | 0 | 0 | - |
| 12-30-82 S. Clem. Isl. | 0.78 | RF opal halfmoon | 6 | 3 | 0 | 0 | - |
| 1-5-83 San Diego | 2.02 | bonito -- -- | 4 | 6 | 1 | N/A | 1 |
| 1-20-83 San Diego | 0.70 | PM RF sculpin | 3 | 41 | 5 | N/A | 0 |
| 1-20-83 San Diego | 1.29 | barracuda KB RF | 2 | 3 | 0 | 0 | - |
| 4-7-83 San Diego | 1.39 | PM RF KB | 4 | 17 | 0 | 0 | - |
| 7-18-83 San Diego | 3.85 | KB bonito RF | 2 | 5 | 0 | - | - |
| 7-19-83 San Diego | 0.26 | bonito KB PM | 2 | 7 | 3 | 9.3 m (3) | 2 |
| 7-20-83 Dana Point | 1.97 | PM RF BSB | 3 | 11 | 0 | - | - |
| 7-21-83 San Diego | 0.15 | YT bonito KB | 3 | 31 | 8 | 11.2 m (6) | 1 |
| 8-11-83 San Diego | 0.13 | YT bonito RF | 2 | 17 | 7 | 15.5 m (4) | 2 |
| 8-12-83 San Diego | 0.15 | YT bonito KB | 2 | 14 | 4 | 7.5 m (8) | 2 |

RF = rockfish, SH = sheephead, KB = kelp bass, PM = Pacific mackerel, BSB = barred sand bass

Table 2. Public Opinion Survey of Crackershell Use on Partyboats

| Date | Location | No. C.S. used | Total fish caught/ hook hour | No. people surveyed | Device bothersome | | Control needed | | Acceptable regularly | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Yes | No | Yes | No | Yes | No |
| 5-28-82 | San Diego | 22 | 0.44 | 5 | 0 | 5 | 5 | 0 | 1 | 4 |
| 6-12-82 | Long Beach | 2 | 0.83 | 12 | N/A | N/A | 9 | 3 | 9 | 3 |
| 6-25-82 | San Diego | 3 | 4.71 | 10 | 0 | 10 | 8 | 2 | 10 | 0 |
| 6-29-82 | San Diego | 10 | 1.01 | 10 | 0 | 10 | 5 | 5 | 10 | 0 |
| 6-30-82 | San Diego | 5 | 2.26 | 10 | 0 | 10 | 6 | 4 | 6 | 4 |
| 7-13-82 | San Diego | 4 | 2.22 | 10 | 1 | 9 | 5 | 5 | 5 | 4 |
| 7-22-82 | San Diego | 2 | 0.38 | 5 | 0 | 5 | 3 | 0 | 4 | 0 |
| 8-5-82 | San Diego | 0 | 2.01 | 4 | N/A | N/A | 1 | 3 | 1 | 3 |
| 1-20-83 | San Diego | 5 | 0.70 | 3 | 2 | 1 | 1 | 2 | 1 | 2 |
| 7-19-83 | San Diego | 4 | 0.26 | 8 | 0 | 8 | 7 | 1 | 6 | 2 |
| 7-21-83 | San Diego | 7 | 0.15 | 9 | 0 | 9 | 9 | 0 | 9 | 0 |
| 8-11-83 | San Diego | 10 | 0.13 | 15 | 2 | 13 | 14 | 1 | 14 | 1 |
| 8-12-83 | San Diego | 5 | 0.15 | 12 | 0 | 12 | 11 | 1 | 11 | 1 |
| TOTALS 13 days | | 79 | | 113 | 5 | 92 | 84 | 27 | 74 | 24 |
| % YES | | | | | 5% | | 76% | | 76% | |
| % NO | | | | | 95% | | 24% | | 24% | |

# ACOUSTIC HARASSMENT AND CRACKERSHELL TESTS IN THE SOUTHERN CALIFORNIA PARTYBOAT FISHERY

John Scholl

In January and April of 1983, a 12 kHz acoustic harassment (AHD) was tested in the partyboat fishery near San Diego. The first test, January 5th, took place approximately three miles west of Point Loma shortly after the partyboat drifted over surface school of Pacific Bonito, Sarda chiliensis. One adult male (AM) and one non-adult male (NAM) were observed consuming Pacific bonito within 25 meters of the partyboat and removing hooked fish from fishing lines. The AHD was turned on for 30 seconds with no noticeable response from either of the animals, which continued to eat fish at the surface. A cracker shell (CS) was exploded within three meters of the sea lions causing an immediate dive response. The AHD was then turned on for 30 seconds. One minute later, the sea lions were observed surfacing 80 meters from the vessel and moving away. When fishing slowed, the vessel moved and no further interactions occurred on that trip.

During the second test trip on January 20th, one and a half miles offshore of Pacific Beach, a NAM was observed within 25 meters from the partyboat. Because of poor fishing and no interactions with the animal, the devices were not used until it was determined that the NAM had some desire to stay in the vicinity. At 0940 hours, a CS was exploded near the animal immediately followed by a 30 second AHD harassment. The animal dove and at 0943 hours was observed 90 meters from the vessel. At 0949 hours another CS was exploded near the animal, followed by AHD harassment. At 0951, the sea lion was observed at 75 meters, but moving toward the vessel. The behavior of the animal had changed to extremely short surface periods which did not allow for effective CS harassment. Fishing continued to be poor and the vessel

departed shortly thereafter.

There was insufficient interactions in the other trips to warrant use of harassment, but these two tests suggest that CS and AHD, used in combination may effectively move sea lions away from fishing vessels at least for short time periods. More extensive research is recommended.

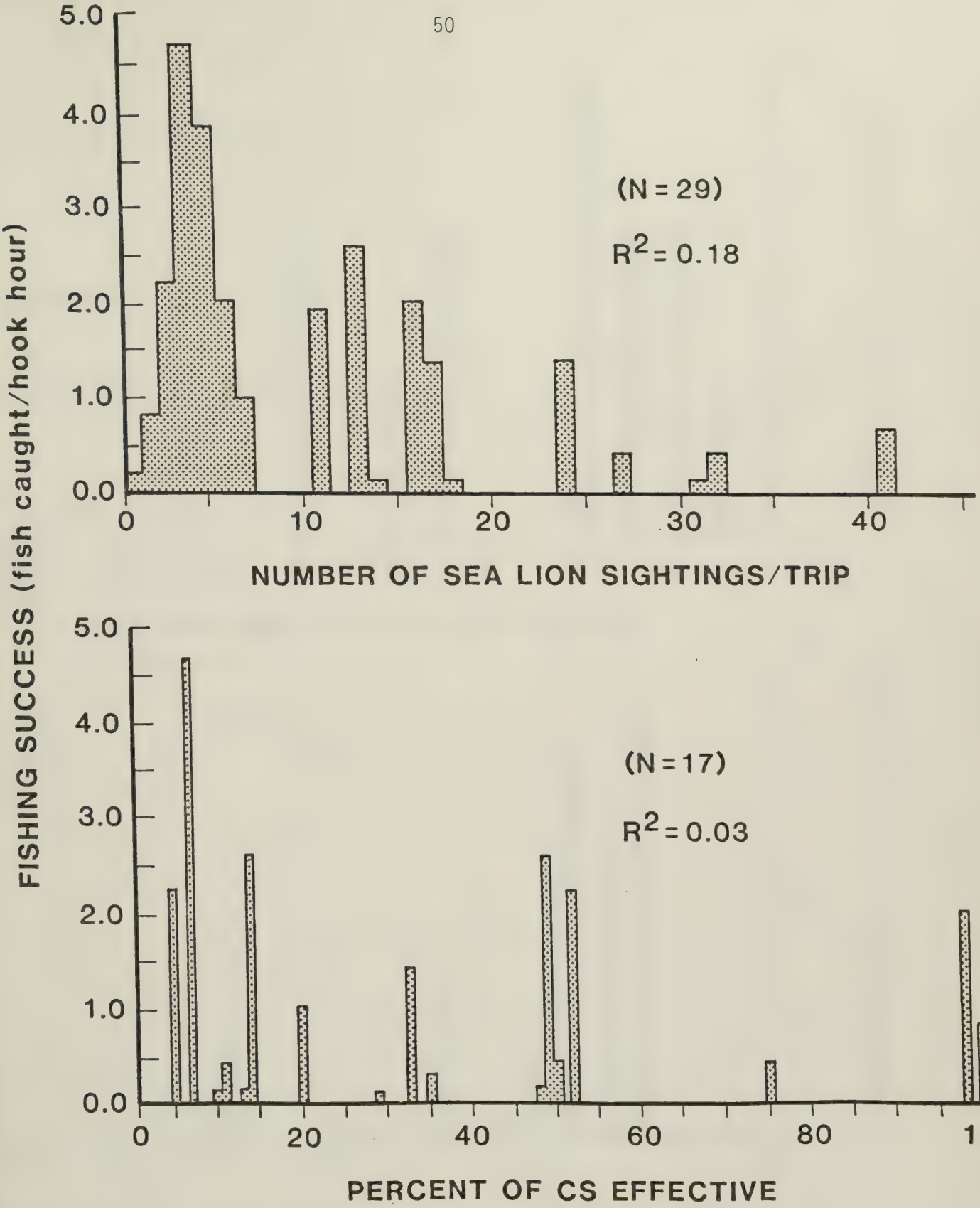


Figure 1. Fishing success (fish caught per hool hour) is plotted against the number of sea lions sighted (above) and (below) against crackershell effectiveness (no sea lion sightings within 100 m for 15 minutes after the explosion).

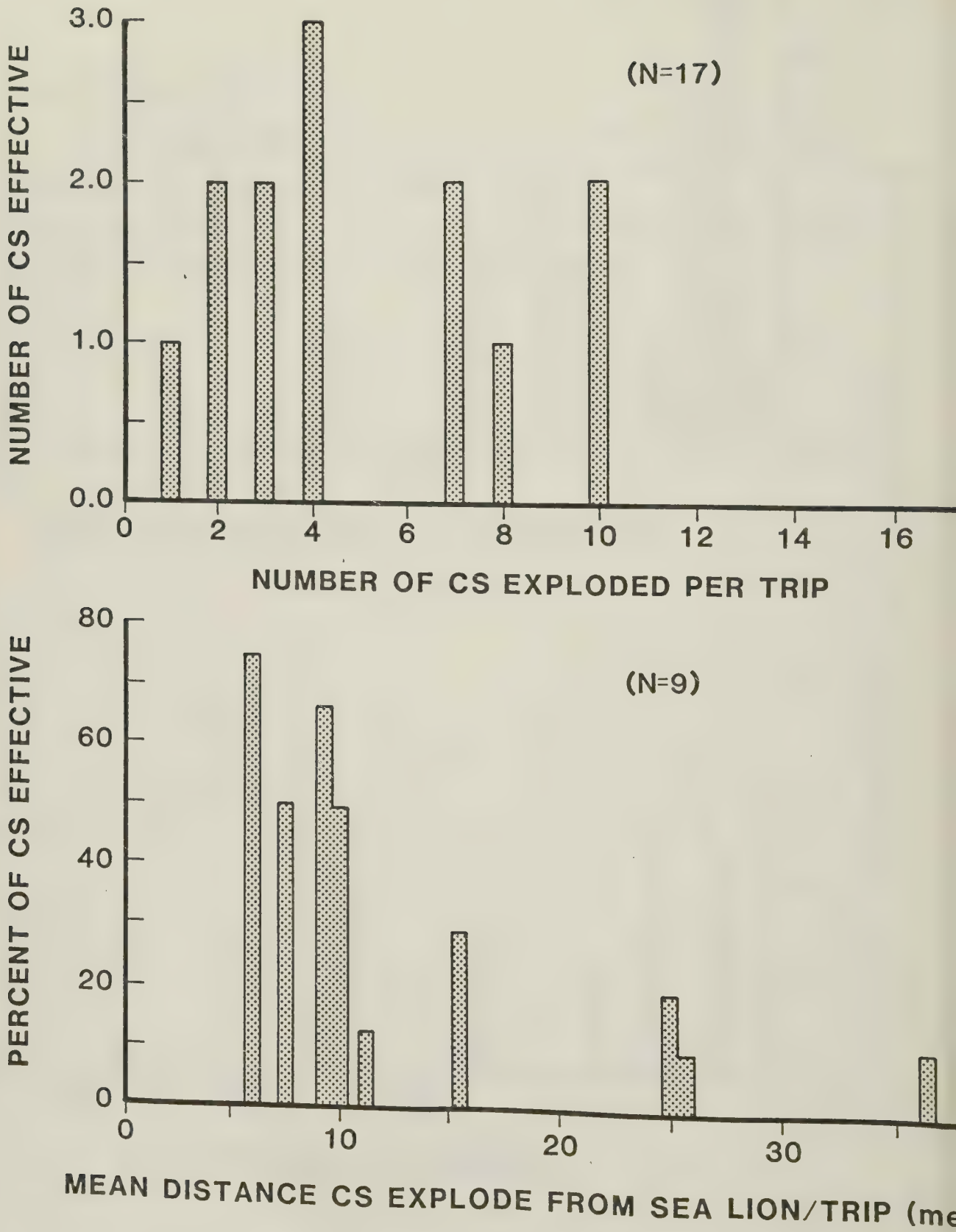


Figure 2. Above. Total number of effective (no sea lions within 100 m for 15 min crackershells plotted against total number of crackershells plotted aga the mean explosion distance from the sea lions.

Appendix I

Census results for the April 1983 survey

Date = Date of count

Site = Site number

Prob: C =Camera malfunction

D = Disturbance

Time = Time of photograph

Tide = Tide height in meters

FA = Film count of adult seals

FP = Film count of pups

FT = Film total seals

GA = Ground count of adult seals

GP = Ground count of pups

GT = Ground counted total seals

ET = Higher total from FT or GT

Max = Maximum count for that site to date

APPENDIX I APRIL 1983

| DATE | SITE | PROB | TIME | TIDE (M) | FA | FP | FT | GA | GP | GT | ET | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/19/83 | 001.0 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 4/19/83 | 002.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 003.0 | | 1030 | 0.00 | 0 | 0 | 0 | 24 | 0 | 24 | 24 | 24 |
| 4/19/83 | 004.0 | | 0 | 0.00 | 0 | 0 | 0 | 60 | 7 | 67 | 67 | 85 |
| 4/19/83 | 005.0 | | 0 | 0.00 | 0 | 0 | 0 | 86 | 7 | 93 | 93 | 93 |
| 4/19/83 | 006.0 | | 0 | 0.00 | 0 | 0 | 0 | 13 | 0 | 13 | 13 | 13 |
| 4/19/83 | 007.0 | | 0 | 0.00 | 0 | 0 | 0 | 23 | 0 | 23 | 23 | 53 |
| | 008.0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 009.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 010.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 4/19/83 | 011.0 | | 0 | 0.00 | 0 | 0 | 0 | 197 | 26 | 223 | 223 | 387 |
| 4/19/83 | 012.0 | | 0858 | -.06 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 38 |
| | 013.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 4/24/83 | 013.1 | C | 0903 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| | 014.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 015.0 | | 0859 | -.06 | 2 | 0 | 2 | 137 | 6 | 143 | 143 | 143 |
| | 016.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 017.0 | | 0906 | -.06 | 23 | 0 | 23 | 0 | 0 | 0 | 23 | 41 |
| | 018.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 4/19/83 | 019.0 | | 0914 | -.06 | 19 | 2 | 21 | 0 | 0 | 0 | 21 | 70 |
| | 020.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| | 021.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 022.0 | | 0922 | -.06 | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 60 |
| | 023.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 024.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 4/19/83 | 025.0 | | 0930 | -.06 | 38 | 1 | 39 | 0 | 0 | 0 | 39 | 138 |
| | 026.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 4/19/83 | 026.1 | | 0932 | -.06 | 22 | 0 | 22 | 0 | 0 | 0 | 22 | 22 |
| | 027.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| | 028.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 029.0 | | 0935 | -.06 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| | 030.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 031.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| | 032.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/19/83 | 033.0 | | 0939 | -.06 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 14 |
| 4/19/83 | 033.1 | | 0939 | -.06 | 16 | 0 | 16 | 0 | 0 | 0 | 16 | 16 |
| 4/19/83 | 034.0 | | 0939 | -.06 | 2 | 1 | 3 | 0 | 0 | 0 | 3 | 11 |
| 4/19/83 | 035.0 | | 0941 | -.06 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 58 |
| 4/19/83 | 035.1 | | 0941 | -.06 | 2 | 1 | 3 | 0 | 0 | 0 | 3 | 3 |
| | 036.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| | 037.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| | 038.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | 039.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| | 040.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 041.0 | | 0950 | -.06 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 57 |
| 4/19/83 | 042.0 | | 0950 | -.06 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 17 |
| | 043.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/19/83 | 043.1 | C | 0954 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 4/19/83 | 044.0 | | 0956 | -.06 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 24 |
| 4/19/83 | 045.0 | | 0956 | -.06 | 21 | 1 | 22 | 0 | 0 | 0 | 22 | 22 |
| 4/19/83 | 046.0 | | 0959 | -.06 | 23 | 2 | 25 | 28 | 9 | 37 | 37 | 41 |
| 4/19/83 | 046.1 | | 1003 | -.06 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| | 047.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 048.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 4/19/83 | 049.0 | | 1004 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | 050.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| | 051.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | 052.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 4/19/83 | 053.0 | | 1005 | -.06 | 76 | 4 | 80 | 0 | 0 | 0 | 80 | 197 |
| | 054.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 4/19/83 | 055.0 | | 1011 | -.06 | 29 | 0 | 29 | 0 | 0 | 0 | 29 | 35 |
| 4/19/83 | 056.0 | | 1011 | -.06 | 47 | 3 | 50 | 0 | 0 | 0 | 50 | 50 |
| 4/19/83 | 056.1 | | 1013 | -.06 | 39 | 0 | 39 | 0 | 0 | 0 | 39 | 39 |
| 4/19/83 | 056.2 | | 1013 | -.06 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 7 |
| 46 | 057.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 058.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 059.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4/19/83 | 060.0 | | 1015 | 0.06 | 11 | 0 | 11 | 0 | 0 | 0 | 11 | 11 |
| | 061.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| | 062.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| | 063.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 4/19/83 | 064.0 | C | 1015 | -.06 | 11 | 0 | 11 | 0 | 0 | 0 | 11 | 27 |
| 4/19/83 | 065.0 | | 1016 | -.06 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 42 |
| 4/19/83 | 065.1 | | 1016 | -.06 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 4/19/83 | 066.0 | | 1016 | -.06 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 17 |
| 4/19/83 | 066.1 | | 1016 | -.06 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 10 |
| 4/19/83 | 066.2 | | 1017 | -.06 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| | 067.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | 068.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 069.0 | | 1017 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 4/19/83 | 070.0 | | 1019 | -.06 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 18 |
| | 071.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| | 072.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 |
| 4/19/83 | 073.0 | | 1021 | -.06 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 13 |
| 4/19/83 | 073.1 | | 1021 | -.06 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 5 |
| 4/19/83 | 074.0 | | 1027 | -.06 | 1 | 0 | 1 | 23 | 2 | 25 | 33 | 50 |
| 4/19/83 | 075.0 | | 1028 | -.06 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 17 |
| 4/19/83 | 076.0 | | 1028 | -.06 | 48 | 0 | 48 | 0 | 0 | 0 | 48 | 71 |
| 4/19/83 | 077.0 | | 1029 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4/19/83 | 078.0 | | 1029 | -.06 | 12 | 1 | 13 | 0 | 0 | 0 | 13 | 54 |
| | 079.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| | 080.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| | 081.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 082.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 083.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 084.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 085.0 | | 1034 | -.03 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 122 |
| 4/19/83 | 086.0 | C | 1034 | -.03 | 26 | 0 | 26 | 0 | 0 | 0 | 26 | 26 |
| | 087.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 087.1 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 088.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 089.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 090.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 091.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 092.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 093.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 094.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 095.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | 096.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 097.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| | 098.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| | 099.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 100.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | 101.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| | 102.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| | 103.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 104.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | 105.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| | 106.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 107.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| | 108.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | 109.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4/19/83 | 110.0 | | 1052 | -.03 | 132 | 18 | 150 | 0 | 0 | 0 | 150 | 150 |
| | 111.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 112.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 113.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 114.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 4/19/83 | 114.1 | C | 1058 | -.03 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| 4/19/83 | 114.2 | C | 1058 | -.03 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 8 |
| | 115.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 116.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 117.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| | 118.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 119.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 120.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 121.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4/19/83 | 122.0 | C | 1100 | -.03 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 18 |
| | 123.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 124.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 125.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 126.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 4/19/83 | 127.0 | | 1102 | -.03 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 97 |
| | 128.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 129.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 4/19/83 | 130.0 | | 1106 | -.02 | 105 | 1 | 106 | 0 | 0 | 0 | 106 | 266 |
| 4/19/83 | 131.0 | C | 1107 | -.02 | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 29 |
| 4/19/83 | 131.1 | | 1107 | 0.00 | 56 | 0 | 56 | 0 | 0 | 0 | 56 | 56 |
| 4/19/83 | 131.2 | | 1107 | 0.00 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| | 132.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| | 133.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 158 |
| | 134.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| | 135.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| | 136.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 137.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| | 138.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| | 139.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| | 140.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/19/83 | 140.1 | | 1120 | 0.00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| | 141.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 4/19/83 | 141.1 | | 1120 | 0.00 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| | 142.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| | 143.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 144.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| | 145.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| | 146.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 147.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| | 148.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 4/20/83 | 149.0 | | 1012 | -.01 | 47 | 4 | 51 | 0 | 0 | 0 | 51 | 71 |
| 4/20/83 | 150.0 | | 1012 | -.01 | 54 | 2 | 56 | 0 | 0 | 0 | 56 | 96 |
| 4/20/83 | 151.0 | | 1012 | -.01 | 13 | 1 | 14 | 0 | 0 | 0 | 14 | 53 |
| 4/20/83 | 152.0 | | 1022 | -.03 | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 41 |
| 4/20/83 | 153.0 | | 1021 | -.03 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 28 |
| | 154.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 4/20/83 | 155.0 | | 1021 | -.03 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 29 |
| 4/20/83 | 156.0 | | 1023 | -.03 | 29 | 2 | 31 | 0 | 0 | 0 | 31 | 47 |
| 4/20/83 | 156.1 | | 1022 | -.03 | 10 | 4 | 14 | 0 | 0 | 0 | 14 | 14 |
| 4/20/83 | 157.0 | | 1023 | -.03 | 76 | 1 | 77 | 128 | 1 | 129 | 129 | 145 |
| | 158.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 159.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4/20/83 | 160.0 | | 1026 | -.15 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 30 |
| 4/20/83 | 160.1 | | 1029 | -.15 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| 4/20/83 | 161.0 | | 1029 | -.15 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 49 |
| 4/20/83 | 162.0 | | 1030 | -.15 | 70 | 1 | 71 | 75 | 0 | 75 | 76 | 133 |
| 4/20/83 | 162.1 | | 1031 | -.15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| | 163.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/19/83 | 164.0 | | 1202 | 0.24 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 17 |
| | 165.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 4/20/83 | 166.0 | | 1049 | -.14 | 36 | 0 | 36 | 0 | 0 | 0 | 36 | 138 |
| 4/20/83 | 167.0 | | 1052 | -.12 | 58 | 0 | 58 | 0 | 0 | 0 | 58 | 58 |
| | 168.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/20/83 | 169.0 | | 1055 | -.14 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 39 |
| | 170.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/20/83 | 171.0 | | 1057 | -.14 | 33 | 0 | 33 | 0 | 0 | 0 | 33 | 33 |
| 4/20/83 | 172.0 | | 1100 | -.15 | 19 | 0 | 19 | 0 | 0 | 0 | 19 | 120 |
| 4/20/83 | 173.0 | | 1058 | -.15 | 53 | 0 | 53 | 0 | 0 | 0 | 53 | 53 |
| | 174.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| 4/20/83 | 175.0 | | 1102 | -.15 | 45 | 1 | 46 | 0 | 0 | 0 | 46 | 76 |
| 4/20/83 | 176.0 | | 1113 | -.12 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 31 |
| 4/20/83 | 177.0 | C | 1115 | -.12 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 71 |
| 4/20/83 | 178.0 | | 1115 | -.12 | 41 | 2 | 43 | 0 | 0 | 0 | 43 | 83 |
| | 179.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 4/20/83 | 180.0 | | 1115 | -.12 | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 44 |
| 4/20/83 | 181.0 | | 1116 | -.12 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 17 |
| | 182.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4/20/83 | 183.0 | | 1120 | -.09 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 4 |
| 4/20/83 | 184.0 | | 1121 | -.09 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 4/20/83 | 185.0 | | 1123 | -.09 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| | 186.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 4/20/83 | 187.0 | | 1124 | -.08 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 4 |
| 4/20/83 | 188.0 | | 1125 | -.08 | 39 | 0 | 39 | 0 | 0 | 0 | 39 | 70 |
| | 189.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/20/83 | 190.0 | | 1126 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 191.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/20/83 | 192.0 | | 1128 | -.09 | 29 | 0 | 29 | 0 | 0 | 0 | 29 | 29 |
| 4/20/83 | 193.0 | | 1128 | -.09 | 22 | 2 | 24 | 0 | 0 | 0 | 24 | 24 |
| 4/20/83 | 194.0 | | 1129 | -.09 | 33 | 0 | 33 | 0 | 0 | 0 | 33 | 45 |
| 4/20/83 | 195.0 | | 1135 | -.09 | 26 | 0 | 26 | 0 | 0 | 0 | 26 | 34 |
| 4/20/83 | 195.1 | | 1136 | -.09 | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 20 |
| | 196.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 4/20/83 | 197.0 | C | 1140 | -.09 | 11 | 0 | 11 | 0 | 0 | 0 | 11 | 104 |
| 4/20/83 | 197.1 | | 1142 | -.06 | 80 | 0 | 80 | 0 | 0 | 0 | 80 | 80 |
| 4/20/83 | 198.0 | | 1142 | -.06 | 36 | 0 | 36 | 0 | 0 | 0 | 36 | 118 |
| 4/20/83 | 199.0 | | 1142 | -.06 | 25 | 0 | 25 | 0 | 0 | 0 | 25 | 25 |
| | 200.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 4/20/83 | 201.0 | | 1143 | -.06 | 34 | 0 | 34 | 0 | 0 | 0 | 34 | 34 |
| 4/20/83 | 202.0 | | 1146 | -.06 | 9 | 0 | 9 | 11 | 0 | 11 | 11 | 25 |
| | 203.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/20/83 | 204.0 | | 1618 | 0.00 | 7 | 6 | 13 | 0 | 0 | 0 | 13 | 13 |
| 4/20/83 | 205.0 | | 1614 | 1.39 | 136 | 18 | 154 | 0 | 0 | 0 | 154 | 283 |
| 4/20/83 | 206.0 | | 1609 | 1.20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/20/83 | 207.0 | | 1601 | 1.20 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 60 |
| | 208.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 4/20/83 | 209.0 | | 0 | 0.00 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 8 |
| | 210.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 211.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 212.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/20/83 | 213.0 | | 1206 | 0.00 | 70 | 1 | 71 | 0 | 0 | 0 | 71 | 85 |
| | 214.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 4/20/83 | 215.0 | | 1212 | -.09 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 12 |
| | 216.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/20/83 | 217.0 | | 1220 | -.11 | 59 | 2 | 61 | 0 | 0 | 0 | 61 | 88 |
| 4/20/83 | 218.0 | C | 1222 | -.06 | 101 | 0 | 101 | 0 | 0 | 0 | 101 | 115 |
| 4/20/83 | 218.1 | | 1224 | -.06 | 24 | 0 | 24 | 0 | 0 | 0 | 24 | 24 |
| 4/20/83 | 219.0 | | 1225 | -.06 | 19 | 0 | 19 | 0 | 0 | 0 | 19 | 19 |
| 4/20/83 | 220.0 | | 1227 | -.06 | 32 | 0 | 32 | 0 | 0 | 0 | 32 | 93 |
| 4/20/83 | 221.0 | | 1229 | -.06 | 286 | 81 | 367 | 506 | 128 | 634 | 634 | 634 |
| | 222.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | 223.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 224.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 509 |
| 4/20/83 | 225.0 | | 1239 | 0.06 | 387 | 13 | 400 | 0 | 0 | 0 | 400 | 400 |
| | 226.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 227.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| | 228.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| | 229.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 230.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 4/20/83 | 231.0 | | 1242 | 0.12 | 73 | 0 | 73 | 0 | 0 | 0 | 73 | 101 |
| 4/20/83 | 232.0 | | 1242 | 0.12 | 64 | 0 | 64 | 0 | 0 | 0 | 64 | 64 |
| | 233.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 4/20/83 | 234.0 | | 1243 | 0.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 235.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 4/20/83 | 236.0 | | 1254 | -.05 | 11 | 0 | 11 | 0 | 0 | 0 | 11 | 19 |
| | 237.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 238.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| | 239.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 240.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/20/83 | 240.1 | C | 1256 | -.05 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| 4/20/83 | 241.0 | | 1256 | -.05 | 28 | 0 | 28 | 0 | 0 | 0 | 28 | 122 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 242.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4/20/83 | 242.1 | | 1300 | -.02 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| | 243.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 4/20/83 | 244.0 | | 1300 | -.02 | 35 | 6 | 41 | 0 | 0 | 0 | 41 | 86 |
| 4/20/83 | 245.0 | | 1301 | -.02 | 37 | 0 | 37 | 0 | 0 | 0 | 37 | 256 |
| | 246.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 4/20/83 | 247.0 | | 1303 | -.02 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 5 |
| 4/21/83 | 248.0 | | 1109 | 0.01 | 281 | 8 | 289 | 0 | 0 | 0 | 289 | 338 |
| 4/21/83 | 249.0 | | 1107 | 0.01 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 136 |
| | 250.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4/21/83 | 251.0 | | 1120 | -.06 | 36 | 0 | 36 | 0 | 0 | 0 | 36 | 115 |
| | 252.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/21/83 | 253.0 | D | 1123 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | 254.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | 255.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | 256.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 4/21/83 | 257.0 | | 1128 | -.09 | 16 | 0 | 16 | 0 | 0 | 0 | 16 | 47 |
| | 258.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 259.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 260.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 261.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/21/83 | 261.1 | | 1138 | -.15 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 10 |
| 4/21/83 | 261.2 | | 1136 | -.12 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 8 |
| 4/21/83 | 262.0 | | 1132 | -.12 | 183 | 0 | 183 | 0 | 0 | 0 | 183 | 183 |
| | 263.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| | 264.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 265.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 266.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | 267.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4/21/83 | 268.0 | | 1145 | -.15 | 16 | 0 | 16 | 0 | 0 | 0 | 16 | 16 |
| | 269.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 270.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/21/83 | 270.1 | | 1148 | -.15 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| 4/21/83 | 270.2 | | 1148 | -.15 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| | 271.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| | 272.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 4/21/83 | 273.0 | | 1150 | -.15 | 34 | 0 | 34 | 0 | 0 | 0 | 34 | 70 |
| 4/21/83 | 274.0 | | 1152 | -.15 | 22 | 0 | 22 | 0 | 0 | 0 | 22 | 22 |
| 4/20/83 | 274.1 | | 1151 | -.15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| | 275.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| | 276.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 277.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 4/21/83 | 277.1 | | 1153 | -.15 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| | 278.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 279.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/21/83 | 280.0 | | 1155 | -.15 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 9 |
| | 281.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 4/21/83 | 282.0 | | 1157 | -.15 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 31 |
| | 283.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 4/21/83 | 284.0 | C | 1204 | -.15 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 29 |
| | 285.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 286.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/21/83 | 287.0 | | 1206 | -.15 | 24 | 0 | 24 | 0 | 0 | 0 | 24 | 64 |
| 4/21/83 | 287.1 | | 1206 | -.15 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| 4/21/83 | 288.0 | | 1208 | -.15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 4/21/83 | 289.0 | 1208 | -.15 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 10 |
| 4/21/83 | 290.0 | 1209 | -.15 | 34 | 0 | 34 | 0 | 0 | 0 | 34 | 34 |
| | 291.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 292.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 293.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 4/21/83 | 294.0 | 1212 | -.15 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 21 |
| | 295.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 4/21/83 | 296.0 | 1213 | -.15 | 30 | 0 | 30 | 0 | 0 | 0 | 30 | 52 |
| | 297.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4/21/83 | 297.1 | 1213 | -.15 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| 4/21/83 | 298.0 | 1214 | -.15 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 26 |
| 4/21/83 | 298.1 | 1215 | -.15 | 23 | 0 | 23 | 0 | 0 | 0 | 23 | 23 |
| 4/21/83 | 299.0 | 1216 | -.15 | 9 | 0 | 9 | 0 | 0 | 0 | 9 | 25 |
| | 300.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 301.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/22/83 | 302.0 | 1219 | -.09 | 55 | 0 | 55 | 0 | 0 | 0 | 55 | 125 |
| 4/22/83 | 303.0 | 1219 | -.09 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 17 |
| 4/22/83 | 304.0 | 1220 | -.09 | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 39 |
| 4/22/83 | 305.0 | 1220 | -.09 | 6 | 0 | 6 | 0 | 0 | 0 | 6 | 45 |
| | 306.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/22/83 | 307.0 | 1220 | -.09 | 70 | 3 | 73 | 0 | 0 | 0 | 73 | 131 |
| | 308.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/22/83 | 309.0 | 1223 | -.09 | 37 | 0 | 37 | 0 | 0 | 0 | 37 | 37 |
| | 310.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4/22/83 | 311.0 | 1225 | -.09 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 10 |
| 4/22/83 | 312.0 | 1226 | -.09 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 6 |
| 4/22/83 | 313.0 | 1227 | -.09 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 27 |
| | 314.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4/22/83 | 315.0 | 1228 | -.09 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 39 |
| 4/22/83 | 316.0 | 1230 | -.09 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 27 |
| 4/22/83 | 316.1 | 1230 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| | 317.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 4/22/83 | 318.0 | 1233 | -.09 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 15 |
| 4/22/83 | 319.0 | 1235 | -.09 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 5 |
| 4/22/83 | 320.0 | 1236 | -.09 | 40 | 0 | 40 | 0 | 0 | 0 | 40 | 57 |
| 4/22/83 | 321.0 | 1236 | -.09 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 4 |
| | 322.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 323.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 4/22/83 | 324.0 | 1238 | -.09 | 53 | 0 | 53 | 0 | 0 | 0 | 53 | 53 |
| | 325.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/22/83 | 326.0 | 1243 | -.09 | 48 | 0 | 48 | 0 | 0 | 0 | 48 | 84 |
| 4/22/83 | 327.0 | 1247 | -.12 | 48 | 0 | 48 | 0 | 0 | 0 | 48 | 48 |
| | 328.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| | 329.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4/22/83 | 330.0 | 1251 | -.12 | 16 | 0 | 16 | 0 | 0 | 0 | 16 | 32 |
| | 331.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/22/83 | 332.0 | 1254 | -.12 | 83 | 0 | 83 | 0 | 0 | 0 | 83 | 176 |
| 4/22/83 | 333.0 | 1256 | -.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 4/22/83 | 334.0 | 1257 | -.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 4/22/83 | 335.0 | 1257 | -.12 | 36 | 0 | 36 | 0 | 0 | 0 | 36 | 36 |
| 4/22/83 | 336.0 | 1301 | -.12 | 6 | 0 | 6 | 0 | 0 | 0 | 6 | 12 |
| 4/22/83 | 336.1 | 1303 | -.12 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 10 |
| 4/22/83 | 337.0 | 1306 | -.12 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 33 |
| 4/22/83 | 337.1 | 1306 | -.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/22/83 | 338.0 | 1307 | -.12 | 43 | 0 | 43 | 0 | 0 | 0 | 43 | 48 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/22/83 | 339.0 | | 1308 | -.12 | 10 | 1 | 11 | 0 | 0 | 0 | 11 | 38 |
| 4/22/83 | 340.0 | | 1309 | -.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/22/83 | 341.0 | | 1310 | -.12 | 66 | 0 | 66 | 0 | 0 | 0 | 66 | 66 |
| 4/22/83 | 342.0 | | 1312 | -.12 | 23 | 0 | 23 | 0 | 0 | 0 | 23 | 32 |
| 4/22/83 | 343.0 | | 1312 | -.12 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 31 |
| 4/22/83 | 344.0 | | 1314 | -.12 | 19 | 0 | 19 | 0 | 0 | 0 | 19 | 19 |
| 4/22/83 | 345.0 | | 1315 | -.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 4/22/83 | 346.0 | | 1315 | -.12 | 41 | 0 | 41 | 0 | 0 | 0 | 41 | 41 |
| 4/22/83 | 347.0 | | 1317 | -.09 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 21 |
| 4/22/83 | 348.0 | | 1219 | -.09 | 27 | 0 | 27 | 0 | 0 | 0 | 27 | 27 |
| 4/22/83 | 349.0 | | 1220 | -.09 | 28 | 0 | 28 | 0 | 0 | 0 | 28 | 51 |
| 4/22/83 | 350.0 | | 1321 | -.12 | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 27 |
| 4/22/83 | 351.0 | | 1321 | -.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4/22/83 | 352.0 | C | 1322 | -.12 | 82 | 2 | 84 | 122 | 1 | 123 | 123 | 183 |
| 4/22/83 | 352.1 | C | 1327 | -.09 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 4/22/83 | 353.0 | C | 1328 | -.09 | 11 | 0 | 11 | 0 | 0 | 0 | 11 | 55 |
| 4/22/83 | 354.0 | | 1329 | -.09 | 34 | 0 | 34 | 0 | 0 | 0 | 34 | 34 |
| 4/22/83 | 355.0 | | 1330 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 4/22/83 | 356.0 | | 1333 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 4/22/83 | 357.0 | | 1335 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/22/83 | 358.0 | | 1335 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 4/22/83 | 359.0 | | 1336 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4/22/83 | 360.0 | | 1339 | -.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 4/22/83 | 361.0 | | 1339 | -.08 | 168 | 18 | 186 | 0 | 0 | 0 | 186 | 186 |
| 4/22/83 | 362.0 | | 1340 | -.08 | 49 | 29 | 78 | 0 | 0 | 0 | 78 | 78 |
| 4/22/83 | 363.0 | | 1341 | -.08 | 241 | 38 | 279 | 0 | 0 | 0 | 279 | 583 |
| 4/22/83 | 364.0 | | 1343 | -.08 | 11 | 1 | 12 | 0 | 0 | 0 | 12 | 13 |
| 4/22/83 | 365.0 | | 1344 | -.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 4/22/83 | 366.0 | | 1345 | -.08 | 234 | 6 | 240 | 0 | 0 | 0 | 240 | 240 |
| 4/22/83 | 367.0 | | 1349 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 4/22/83 | 368.0 | | 1354 | -.06 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 43 |
| 4/22/83 | 369.0 | | 1402 | -.03 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 11 |
| 4/22/83 | 370.0 | | 1408 | -.09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/22/83 | 371.0 | | 1410 | -.08 | 19 | 0 | 19 | 0 | 0 | 0 | 19 | 25 |
| 4/22/83 | 372.0 | | 1410 | -.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4/22/83 | 373.0 | | 1417 | -.08 | 102 | 2 | 104 | 0 | 0 | 0 | 104 | 172 |
| 4/22/83 | 373.1 | | 1414 | -.08 | 30 | 4 | 34 | 0 | 0 | 0 | 34 | 34 |
| 4/22/83 | 374.0 | | 1416 | -.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 4/22/83 | 375.0 | | 1416 | -.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 4/22/83 | 376.0 | | 1416 | -.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4/22/83 | 377.0 | | 1423 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4/22/83 | 378.0 | | 1426 | -.06 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 5 |
| 4/22/83 | 378.1 | | 1426 | -.06 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| 4/22/83 | 379.0 | | 1426 | -.06 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| | 380.0 | | 1426 | -.06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 4/22/83 | 381.0 | | 1429 | -.06 | 39 | 0 | 39 | 0 | 0 | 0 | 39 | 46 |
| 4/22/83 | 381.1 | | 1436 | -.05 | 264 | 18 | 282 | 0 | 0 | 0 | 282 | 282 |
| 4/22/83 | 382.0 | | 1435 | -.05 | 187 | 5 | 192 | 0 | 0 | 0 | 192 | 483 |
| 4/22/83 | 383.0 | C | 1440 | 0.00 | 342 | 150 | 492 | 0 | 0 | 0 | 492 | 492 |
| 4/22/83 | 384.0 | | 1456 | 0.36 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 518 |
| 4/22/83 | 385.0 | | 1504 | 0.36 | 93 | 24 | 117 | 0 | 0 | 0 | 117 | 146 |
| 4/23/83 | 386.0 | | 1332 | 0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 387.0 | | 1333 | 0.26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 388.0 | | 1333 | 0.26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 389.0 | | 1335 | 0.26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/23/83 | 390.0 | | 1333 | 0.26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 4/23/83 | 391.0 | | 1334 | 0.22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 392.0 | | 1334 | 0.22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 393.0 | | 1334 | 0.22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 4/23/83 | 394.0 | | 1435 | 0.05 | 22 | 0 | 22 | 0 | 0 | 0 | 22 | 22 |
| 4/23/83 | 395.0 | | 1434 | 0.05 | 10 | 0 | 10 | 9 | 0 | 9 | 10 | 10 |
| 4/23/83 | 396.0 | | 1338 | 0.20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 397.0 | | 1338 | 0.20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 4/23/83 | 398.0 | C | 0 | 0.00 | 1 | 1 | 2 | 0 | 0 | 0 | 2 | 2 |
| 4/23/83 | 399.0 | | 0 | 0.00 | 9 | 0 | 9 | 0 | 0 | 0 | 9 | 10 |
| 4/23/83 | 400.0 | | 0 | 0.00 | 58 | 0 | 58 | 0 | 0 | 0 | 58 | 58 |
| | 401.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 402.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 403.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 404.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 405.0 | | 1341 | 0.08 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 56 |
| 4/23/83 | 406.0 | | 1345 | 0.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 407.0 | | 1347 | 0.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 408.0 | | 1348 | 0.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 409.0 | | 1357 | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 410.0 | | 1358 | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 4/23/83 | 411.0 | | 1358 | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 412.0 | | 1358 | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 4/23/83 | 413.0 | | 1359 | 0.03 | 24 | 0 | 24 | 0 | 0 | 0 | 24 | 66 |
| 4/23/83 | 413.1 | | 1401 | 0.03 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 4/23/83 | 414.0 | | 1402 | 0.03 | 152 | 63 | 215 | 0 | 0 | 0 | 215 | 263 |
| 4/23/83 | 415.0 | | 1402 | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| 4/23/83 | 416.0 | | 1403 | 0.03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 417.0 | | 1406 | 0.05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 418.0 | | 1408 | 0.05 | 104 | 5 | 109 | 0 | 0 | 0 | 109 | 208 |
| | 421.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4/23/83 | 422.0 | | | 0.00 | 0 | 0 | 0 | 69 | 0 | 69 | 69 | 69 |
| ** TOTAL | ** | | | | | | | | | | 9298 | 18539 |

Appendix II

Census results for the June 1983 survey

Date = Date of count

Site = Site number

Prob: C = Camera malfunction

D = Disturbance

Time = Time of photograph

Tide = Tide height in meters

FA = Film count of adult seals

FP = Film count of pups

FT = Film total seals

GA = Ground count of pups

GP = Ground count of pups

GT = Ground counted total seals

ET = Higher total from FT or GT

Max = Maximum count for that site to date

APPENDIX II JUNE 1983

| DATE | SITE | PROB | TIME | TIDE (M) | FA | FP | FT | GA | GP | GT | ET | MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 2.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/20/83 | 3.0 | | 0 | 0.00 | 0 | 0 | 0 | 13 | 0 | 13 | 13 | 19 |
| 6/20/83 | 4.0 | | 1357 | 0.85 | 88 | 0 | 88 | 92 | 3 | 95 | 95 | 95 |
| | 5.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 93 |
| | 6.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 7.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| | 8.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/20/84 | 10.0 | | 0 | 0.00 | 0 | 0 | 0 | 205 | 0 | 205 | 205 | 205 |
| 6/20/83 | 11.0 | C | 1300 | 0.43 | 309 | 2 | 311 | 554 | 0 | 554 | 554 | 554 |
| | 12.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| | 13.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| | 13.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6/20/83 | 14.0 | | 1253 | 0.41 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 13 |
| 6/20/83 | 14.1 | | 1251 | 0.41 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 31 |
| 6/20/83 | 15.0 | | 1251 | 0.41 | 247 | 0 | 247 | 100 | 4 | 104 | 247 | 247 |
| 6/20/83 | 16.0 | | 1250 | 0.41 | 49 | 0 | 49 | 0 | 0 | 0 | 49 | 49 |
| | 17.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| | 18.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 6/20/83 | 19.0 | | 1242 | 0.38 | 94 | 0 | 94 | 0 | 0 | 0 | 94 | 94 |
| | 20.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 6/20/83 | 21.0 | | 1234 | 0.36 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 4 |
| 6/20/83 | 21.1 | C | 1231 | 0.36 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 10 |
| 6/20/83 | 22.0 | | 1230 | 0.36 | 51 | 0 | 51 | 0 | 0 | 0 | 51 | 60 |
| | 23.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/20/83 | 23.1 | | 1207 | 0.36 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| 6/20/83 | 24.0 | C | 1207 | 0.36 | 58 | 0 | 58 | 0 | 0 | 0 | 58 | 58 |
| | 25.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 |
| | 26.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| | 26.1 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 27.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| | 28.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 29.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6/20/83 | 30.0 | C | 1158 | 0.36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 31.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| 6/20/83 | 32.0 | C | 1158 | 0.36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 33.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| | 33.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| | 34.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 6/20/83 | 35.0 | C | 1157 | 0.36 | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 58 |
| | 35.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 6/20/83 | 36.0 | C | 1157 | 0.36 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 22 |
| | 37.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| | 38.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 6/20/83 | 39.0 | | 1157 | 0.36 | 66 | 0 | 66 | 0 | 0 | 0 | 66 | 132 |
| | 40.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/20/83 | 41.0 | | 1154 | 0.36 | 25 | 0 | 25 | 0 | 0 | 0 | 25 | 57 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/20/83 | 42.0 | 1153 | 0.36 | 36 | 0 | 36 | 0 | 0 | 0 | 36 | 36 |
| 6/20/83 | 42.1 | 1152 | 0.36 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 12 |
| | 43.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| | 43.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 44.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| | 45.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 6/20/83 | 46.0 | 1145 | 0.35 | 38 | 0 | 38 | 37 | 4 | 41 | 41 | 41 |
| | 46.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 47.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 48.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 6/18/83 | 49.0 | 1010 | 0.12 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 15 |
| | 50.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 |
| | 51.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | 52.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 6/18/83 | 53.0 | 1012 | 0.12 | 27 | 0 | 27 | 0 | 0 | 0 | 27 | 197 |
| 6/18/83 | 54.0 | 1012 | 0.12 | 43 | 0 | 43 | 0 | 0 | 0 | 43 | 49 |
| 6/18/83 | 55.0 | 1014 | 0.12 | 101 | 0 | 101 | 0 | 0 | 0 | 101 | 101 |
| | 56.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 6/18/83 | 56.1 | 1016 | 0.12 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 12 |
| | 56.2 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 6/18/83 | 57.0 | 1014 | 0.12 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 46 |
| 6/18/83 | 58.0 | 1018 | 0.12 | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 18 |
| 6/18/83 | 58.1 | 1018 | 0.12 | 51 | 0 | 51 | 0 | 0 | 0 | 51 | 51 |
| | 59.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 60.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | 61.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| | 62.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| | 63.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 6/18/83 | 64.0 | 1019 | 0.12 | 9 | 0 | 9 | 0 | 0 | 0 | 9 | 27 |
| 6/18/83 | 65.0 | 1019 | 0.12 | 43 | 0 | 43 | 0 | 0 | 0 | 43 | 43 |
| | 65.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 66.0 | 1025 | 0.12 | 51 | 0 | 51 | 0 | 0 | 0 | 51 | 51 |
| 6/18/83 | 66.1 | 1023 | 0.12 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 8 |
| | 67.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | 68.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 69.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | 70.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 6/18/83 | 70.1 | 1026 | 0.12 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 8 |
| 6/18/83 | 71.0 | 1027 | 0.12 | 87 | 0 | 87 | 0 | 0 | 0 | 87 | 87 |
| | 72.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 |
| | 73.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 73.1 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6/18/83 | 74.0 | 1030 | 0.12 | 48 | 0 | 48 | 44 | 0 | 44 | 48 | 50 |
| 6/18/83 | 75.0 | 1031 | 0.12 | 23 | 0 | 23 | 0 | 0 | 0 | 23 | 23 |
| 6/18/83 | 76.0 | 1032 | 0.12 | 87 | 0 | 87 | 90 | 0 | 90 | 90 | 90 |
| 6/18/83 | 77.0 | 1032 | 0.12 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 17 |
| 6/18/83 | 77.1 | 1037 | 0.12 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| | 78.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 6/18/83 | 79.0 | 1037 | 0.12 | 34 | 0 | 34 | 0 | 0 | 0 | 34 | 48 |
| | 80.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| | 81.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 82.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 83.0 | 1040 | 0.12 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 3 |
| | 84.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 85.0 | 1043 | 0.12 | 64 | 0 | 64 | 0 | 0 | 0 | 64 | 122 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/18/83 | 86.0 | 1044 | 0.12 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 26 |
| 6/18/83 | 87.0 | 1045 | 0.12 | 101 | 0 | 101 | 0 | 0 | 0 | 101 | 138 |
| | 87.1 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 88.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 89.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 90.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 91.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 91.1 | 1051 | 0.12 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 21 |
| | 92.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 93.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 94.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 95.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | 96.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 97.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 6/18/83 | 98.0 | 1057 | 0.12 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 59 |
| 6/18/83 | 99.0 | 1059 | 0.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 100.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 6/18/83 | 101.0 | 1101 | 0.12 | 9 | 0 | 9 | 0 | 0 | 0 | 9 | 14 |
| 6/18/83 | 102.0 | 1102 | 0.12 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 44 |
| | 103.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 104.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | 105.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| | 106.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 107.0 | 0 | 0.00 | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 34 |
| | 108.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| | 109.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 6/18/83 | 110.0 | 1111 | 0.12 | 79 | 0 | 79 | 0 | 0 | 0 | 79 | 150 |
| 6/18/83 | 111.0 | 1113 | 0.12 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 13 |
| | 112.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 113.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 114.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| 6/18/83 | 114.1 | 1114 | 0.12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 114.2 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | 115.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 116.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 117.0 | 0 | 0.00 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 29 |
| | 118.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 119.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 120.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 121.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 122.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| | 123.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 124.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 125.0 | 0 | 0.00 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 13 |
| | 126.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 6/18/83 | 127.0 | 1122 | 0.12 | 43 | 0 | 43 | 0 | 0 | 0 | 43 | 97 |
| | 128.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 129.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 6/18/83 | 130.0 | 1129 | 0.12 | 159 | 0 | 159 | 0 | 0 | 0 | 159 | 266 |
| | 131.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| | 131.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| | 131.2 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 6/18/83 | 132.0 | 0 | 0.00 | 15 | 0 | 15 | 0 | 0 | 0 | 15 | 32 |
| | 133.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 158 |
| | 134.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 135.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| | 136.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 137.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6/18/83 | 137.1 | | | 0.00 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| 6/18/83 | 138.0 | | 0 | 0.00 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 26 |
| 6/18/83 | 139.0 | | 1143 | 0.16 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 14 |
| | 140.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| | 140.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 141.0 | C | 1144 | 0.16 | 24 | 0 | 24 | 0 | 0 | 0 | 24 | 71 |
| | 141.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 142.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| | 143.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6/18/83 | 144.0 | | 1146 | 0.16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 6/18/83 | 145.0 | | 1147 | 0.16 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 25 |
| 6/18/83 | 146.0 | D | 1148 | 0.16 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 17 |
| | 147.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| | 148.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 6/18/83 | 149.0 | | 1153 | 0.16 | 24 | 0 | 24 | 0 | 0 | 0 | 24 | 71 |
| 6/18/83 | 150.0 | | 1154 | 0.16 | 58 | 0 | 58 | 0 | 0 | 0 | 58 | 96 |
| 6/18/83 | 151.0 | | 1154 | 0.16 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 53 |
| | 152.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| 6/18/83 | 153.0 | | 1156 | 0.18 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 28 |
| | 154.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 6/18/83 | 155.0 | | 1157 | 0.18 | 27 | 0 | 27 | 0 | 0 | 0 | 27 | 29 |
| | 156.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 6/18/83 | 156.1 | | 1159 | 0.18 | 54 | 0 | 54 | 0 | 0 | 0 | 54 | 54 |
| 6/18/83 | 157.0 | | 1159 | 0.18 | 120 | 0 | 120 | 0 | 0 | 0 | 120 | 145 |
| | 158.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 159.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 6/18/83 | 160.0 | | 1201 | 0.27 | 43 | 0 | 43 | 0 | 0 | 0 | 43 | 43 |
| | 160.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 161.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 6/18/83 | 162.0 | | 1206 | 0.27 | 99 | 0 | 99 | 102 | 6 | 108 | 108 | 133 |
| | 162.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 163.0 | | 1207 | 0.27 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 7 |
| 6/18/83 | 164.0 | | 1214 | 0.34 | 34 | 0 | 34 | 0 | 0 | 0 | 34 | 34 |
| 6/18/83 | 165.0 | | 1223 | 0.43 | 0 | 0 | 0 | 34 | 0 | 34 | 34 | 34 |
| | 166.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 |
| 6/18/83 | 167.0 | | 1228 | 0.43 | 45 | 0 | 45 | 0 | 0 | 0 | 45 | 58 |
| | 168.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 169.0 | | 1232 | 0.44 | 40 | 0 | 40 | 0 | 0 | 0 | 40 | 40 |
| | 170.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 171.0 | | 1236 | 0.47 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 33 |
| 6/18/83 | 172.0 | | 1236 | 0.47 | 83 | 0 | 83 | 0 | 0 | 0 | 83 | 120 |
| 6/18/83 | 173.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| | 174.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| 6/18/83 | 175.0 | | 1238 | 0.52 | 26 | 0 | 26 | 0 | 0 | 0 | 26 | 76 |
| 6/18/83 | 176.0 | | 1246 | 0.52 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 31 |
| 6/18/83 | 177.0 | | 1243 | 0.52 | 16 | 0 | 16 | 0 | 0 | 0 | 16 | 71 |
| 6/18/83 | 178.0 | | 1248 | 0.52 | 74 | 0 | 74 | 0 | 0 | 0 | 74 | 83 |
| | 179.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 6/18/83 | 180.0 | | 1249 | 0.52 | 22 | 0 | 22 | 0 | 0 | 0 | 22 | 44 |
| | 181.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| | 182.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 183.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 184.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 185.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 186.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| | 187.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 6/18/83 | 188.0 | 1256 | 0.62 | 95 | 0 | 95 | 0 | 0 | 0 | 95 | 95 |
| | 189.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 190.0 | 1257 | 0.62 | 53 | 0 | 53 | 0 | 0 | 0 | 53 | 43 |
| | 191.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 192.0 | 1258 | 0.62 | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 29 |
| | 193.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 6/18/83 | 194.0 | 1259 | 0.62 | 29 | 0 | 29 | 0 | 0 | 0 | 29 | 45 |
| 6/18/83 | 195.0 | 1307 | 0.62 | 40 | 0 | 40 | 0 | 0 | 0 | 40 | 34 |
| | 195.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| | 196.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 6/18/83 | 197.0 | 1314 | 0.62 | 84 | 0 | 84 | 0 | 0 | 0 | 84 | 104 |
| | 197.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| | 198.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 118 |
| 6/18/83 | 199.0 | 1316 | 0.62 | 45 | 0 | 45 | 0 | 0 | 0 | 45 | 45 |
| 6/18/83 | 200.0 | 1316 | 0.62 | 58 | 0 | 58 | 0 | 0 | 0 | 58 | 58 |
| 6/18/83 | 201.0 | 1316 | 0.62 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 34 |
| 6/18/83 | 202.0 | 1320 | 0.62 | 34 | 0 | 34 | 35 | 0 | 35 | 35 | 35 |
| | 203.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 204.0 | 0929 | 1.55 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 13 |
| 6/19/83 | 205.0 | 0925 | 1.55 | 125 | 0 | 125 | 0 | 0 | 0 | 125 | 283 |
| 6/19/83 | 206.0 | 0923 | 1.55 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 7 |
| 6/19/83 | 207.0 | 0938 | 1.55 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 60 |
| | 208.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 6/18/83 | 209.0 | 1332 | 0.06 | 58 | 0 | 58 | 0 | 0 | 0 | 58 | 58 |
| | 210.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 211.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 212.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 213.0 | 1338 | 0.03 | 85 | 0 | 85 | 0 | 0 | 0 | 85 | 85 |
| 6/19/83 | 214.0 | 1013 | 0.12 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 8 |
| 6/18/83 | 215.0 | 1346 | 0.58 | 3 | 0 | 3 | 0 | 0 | 0 | 3 | 12 |
| | 216.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/18/83 | 217.0 | 1353 | 0.31 | 103 | 0 | 103 | 0 | 0 | 0 | 103 | 103 |
| 6/18/83 | 218.0 | 1356 | 0.37 | 118 | 0 | 118 | 0 | 0 | 0 | 118 | 118 |
| | 218.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 6/18/83 | 219.0 | 1358 | 0.37 | 19 | 0 | 19 | 0 | 0 | 0 | 19 | 19 |
| 6/18/83 | 220.0 | 1402 | 0.37 | 30 | 0 | 30 | 0 | 0 | 0 | 30 | 88 |
| 6/18/83 | 221.0 | 1402 | 0.37 | 538 | 0 | 538 | 563 | 20 | 583 | 583 | 634 |
| | 222.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | 223.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/18/83 | 224.0 | 1402 | 0.91 | 86 | 0 | 86 | 0 | 0 | 0 | 86 | 509 |
| 6/18/83 | 225.0 | 1411 | 0.88 | 214 | 0 | 214 | 0 | 0 | 0 | 214 | 400 |
| 6/19/83 | 226.0 | 1108 | 0.34 | 66 | 0 | 66 | 0 | 0 | 0 | 66 | 66 |
| 6/19/83 | 226.1 | 1108 | 0.34 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 21 |
| 6/19/83 | 226.2 | 1108 | 0.34 | 72 | 0 | 72 | 0 | 0 | 0 | 72 | 72 |
| 6/19/83 | 226.3 | 1108 | 0.34 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 12 |
| | 227.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| | 228.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| | 229.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 230.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | 231.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| | 232.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 233.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| | 234.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 235.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| | 236.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| | 237.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 238.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| | 239.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 240.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 240.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 6/19/83 | 241.0 | | 1122 | 0.31 | 105 | 0 | 105 | 0 | 0 | 0 | 105 | 122 |
| | 242.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 242.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/19/83 | 243.0 | | 1123 | 0.31 | 30 | 0 | 30 | 0 | 0 | 0 | 30 | 53 |
| 6/19/83 | 244.0 | | 1123 | 0.31 | 20 | 0 | 20 | 0 | 0 | 0 | 20 | 86 |
| 6/19/83 | 245.0 | | 1124 | 0.31 | 247 | 0 | 247 | 0 | 0 | 0 | 247 | 256 |
| | 246.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| | 247.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6/18/83 | 248.0 | | 1448 | 0.75 | 215 | 0 | 215 | 0 | 0 | 0 | 215 | 338 |
| 6/18/83 | 249.0 | | 1446 | 0.75 | 44 | 0 | 44 | 0 | 0 | 0 | 44 | 136 |
| | 250.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 251.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| | 252.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 253.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | 254.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | 255.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | 256.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 6/19/83 | 257.0 | | 1139 | 0.30 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 47 |
| | 258.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 259.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 260.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 261.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 261.1 | | 1145 | 0.27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 6/19/83 | 261.2 | | | 0.00 | 6 | 0 | 6 | 0 | 0 | 0 | 6 | 8 |
| 6/19/83 | 262.0 | D | 1141 | -.27 | 140 | 0 | 140 | 0 | 0 | 0 | 140 | 140 |
| | 263.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| | 264.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 265.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 266.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | 267.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| | 268.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 6/19/83 | 268.1 | | 1149 | 0.27 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| | 269.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 270.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 270.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 270.2 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 271.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 6/19/83 | 272.0 | | 1151 | 0.27 | 6 | 0 | 6 | 0 | 0 | 0 | 6 | 12 |
| 6/19/83 | 273.0 | | 1150 | 0.27 | 24 | 0 | 24 | 0 | 0 | 0 | 24 | 70 |
| | 274.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| | 274.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/19/83 | 275.0 | | 1153 | 0.27 | 17 | 0 | 17 | 0 | 0 | 0 | 17 | 20 |
| | 276.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 277.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| | 277.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 278.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 279.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 280.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | 281.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 6/19/83 | 282.0 | 1157 | 0.27 | 50 | 0 | 50 | 0 | 0 | 0 | 50 | 50 |
| | 283.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 284.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 6/19/83 | 284.1 | 1203 | 0.27 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 5 |
| | 285.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 286.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 287.0 | 1205 | 0.27 | 39 | 0 | 39 | 0 | 0 | 0 | 39 | 64 |
| | 287.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 288.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 289.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 6/19/83 | 290.0 | 1207 | 0.27 | 27 | 0 | 27 | 0 | 0 | 0 | 27 | 34 |
| | 291.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 292.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 293.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| | 294.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| | 295.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| 6/19/83 | 296.0 | 1210 | 0.27 | 34 | 0 | 34 | 0 | 0 | 0 | 34 | 52 |
| | 297.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6/19/83 | 297.1 | 1211 | 0.27 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 |
| | 298.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 6/19/83 | 298.1 | 1214 | 0.27 | 14 | 0 | 14 | 0 | 0 | 0 | 14 | 23 |
| | 299.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| | 300.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 301.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/19/83 | 302.0 | 1216 | 0.27 | 74 | 0 | 74 | 0 | 0 | 0 | 74 | 125 |
| 6/19/83 | 303.0 | 1217 | 0.27 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 17 |
| | 304.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| | 305.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| | 306.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/19/83 | 307.0 | 1218 | 0.27 | 46 | 0 | 46 | 0 | 0 | 0 | 46 | 131 |
| | 308.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 309.0 | 1218 | 0.27 | 44 | 0 | 44 | 0 | 0 | 0 | 44 | 44 |
| | 310.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 311.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 312.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6/19/83 | 313.0 | 1220 | 0.27 | 15 | 0 | 15 | 0 | 0 | 0 | 15 | 27 |
| | 314.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 6/19/83 | 315.0 | 1222 | 0.29 | 25 | 0 | 25 | 0 | 0 | 0 | 25 | 39 |
| | 316.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| | 316.1 | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 317.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 6/19/83 | 318.0 | 1225 | 0.30 | 15 | 0 | 15 | 0 | 0 | 0 | 15 | 15 |
| | 319.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6/19/83 | 320.0 | 1227 | 0.30 | 49 | 0 | 49 | 0 | 0 | 0 | 49 | 57 |
| | 321.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| | 322.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 323.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| | 324.0 | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |
| 6/19/83 | 325.0 | 1237 | 0.30 | 27 | 0 | 27 | 0 | 0 | 0 | 27 | 27 |
| 6/19/83 | 326.0 | 1236 | 0.30 | 46 | 0 | 46 | 0 | 0 | 0 | 46 | 84 |
| 6/19/83 | 327.0 | 1240 | 0.30 | 28 | 0 | 28 | 0 | 0 | 0 | 28 | 48 |
| 6/19/83 | 328.0 | 1241 | 0.30 | 27 | 0 | 27 | 0 | 0 | 0 | 27 | 27 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 329.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6/19/83 | 330.0 | | 1243 | 0.30 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 32 |
| | 331.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 332.0 | | 1247 | 0.32 | 89 | 0 | 89 | 0 | 0 | 0 | 89 | 176 |
| | 333.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 6/19/83 | 334.0 | | 1250 | 0.34 | 33 | 0 | 33 | 0 | 0 | 0 | 33 | 45 |
| | 335.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| 6/19/83 | 336.0 | | 1254 | 0.34 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 12 |
| | 336.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 6/19/83 | 337.0 | | 1257 | 0.37 | 25 | 0 | 25 | 0 | 0 | 0 | 25 | 33 |
| | 337.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 338.0 | | 1259 | 0.37 | 52 | 0 | 52 | 0 | 0 | 0 | 52 | 52 |
| 6/19/83 | 339.0 | | 1301 | 0.37 | 22 | 0 | 22 | 0 | 0 | 0 | 22 | 38 |
| 6/19/83 | 340.0 | | 1302 | 0.37 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 8 |
| 6/19/83 | 341.0 | | 1303 | 0.37 | 50 | 0 | 50 | 0 | 0 | 0 | 50 | 66 |
| | 342.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 6/19/83 | 342.1 | | 1305 | 0.37 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 7 |
| 6/19/83 | 343.0 | | 1306 | 0.40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 6/19/83 | 344.0 | | 1309 | 0.40 | 15 | 0 | 15 | 0 | 0 | 0 | 15 | 19 |
| | 345.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 6/19/83 | 346.0 | | 1310 | 0.40 | 26 | 0 | 26 | 0 | 0 | 0 | 26 | 41 |
| 6/19/83 | 347.0 | | 1312 | 0.40 | 13 | 0 | 13 | 0 | 0 | 0 | 13 | 21 |
| 6/19/83 | 348.0 | | 1316 | 0.40 | 31 | 0 | 31 | 0 | 0 | 0 | 31 | 31 |
| 6/19/83 | 349.0 | | 1316 | 0.40 | 26 | 0 | 26 | 0 | 0 | 0 | 26 | 51 |
| 6/19/83 | 350.0 | | 1318 | 0.40 | 18 | 0 | 18 | 0 | 0 | 0 | 18 | 27 |
| 6/19/83 | 351.0 | | 1318 | 0.40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6/19/83 | 352.0 | C | 1320 | 0.41 | 13 | 0 | 13 | 101 | 4 | 105 | 105 | 183 |
| 6/19/83 | 353.0 | | 1325 | 0.43 | 22 | 0 | 22 | 0 | 0 | 0 | 22 | 55 |
| | 352.1 | | | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/19/83 | 354.0 | | 1328 | 0.43 | 44 | 0 | 44 | 0 | 0 | 0 | 44 | 44 |
| 6/19/83 | 355.0 | | 1329 | 0.43 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 9 |
| | 356.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| | 357.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 358.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| | 359.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| | 360.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| | 361.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 |
| | 362.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| 6/19/83 | 363.0 | | 1343 | 0.49 | 333 | 0 | 333 | 0 | 0 | 0 | 333 | 583 |
| | 364.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | 365.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| | 366.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 240 |
| 6/19/83 | 366.1 | | 1347 | 0.55 | 86 | 0 | 86 | 0 | 0 | 0 | 86 | 86 |
| | 367.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | 368.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| | 369.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | 370.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 371.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| | 372.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 6/19/83 | 373.0 | | 1410 | 0.56 | 117 | 0 | 117 | 0 | 0 | 0 | 117 | 172 |
| | 374.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 6/19/83 | 375.0 | | 1411 | 0.56 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 10 |
| | 376.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 377.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| | 378.0 | | 0 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 378.1 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 379.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | 380.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 6/19/83 | 381.0 | 1419 0.55 | 46 | 0 | 46 | 0 | 0 | 0 | 46 | 46 |
| | 381.1 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 282 |
| 6/19/83 | 382.0 | 1425 2.80 | 423 | 0 | 423 | 0 | 0 | 0 | 423 | 483 |
| 6/19/83 | 383.0 | 1430 0.00 | 457 | 0 | 457 | 0 | 0 | 0 | 457 | 492 |
| | | -143 5 | | | | | | | | |
| 6/19/83 | 384.0 | 1439 0.09 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 518 |
| 6/19/83 | 385.0 | 1442 0.19 | 96 | 0 | 96 | 0 | 0 | 0 | 96 | 146 |
| | 386.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 387.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 388.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 389.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 390.0 | 1455 2.74 | 48 | 0 | 48 | 0 | 0 | 0 | 48 | 48 |
| | 391.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 392.0 | 1455 2.74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 393.0 | 1456 2.74 | 21 | 0 | 21 | 0 | 0 | 0 | 21 | 21 |
| | 394.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 6/19/83 | 395.0 | 1457 2.74 | 16 | 0 | 16 | 31 | 1 | 32 | 32 | 32 |
| 6/19/83 | 396.0 | 1458 2.74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 397.0 | 1459 2.74 | 12 | 0 | 12 | 0 | 0 | 0 | 12 | 12 |
| | 398.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6/19/83 | 399.0 | 1500 2.74 | 46 | 0 | 46 | 0 | 0 | 0 | 46 | 46 |
| | 400.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| | 401.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 402.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 403.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 404.0 | 0 0.00 | 0 | 0 | 0 | 76 | 3 | 79 | 79 | 79 |
| 6/19/83 | 405.0 | 1501 2.74 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 56 |
| | 406.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 407.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 408.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 409.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 410.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| | 411.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 412.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| 6/19/83 | 413.0 | 1520 2.71 | 33 | 0 | 33 | 0 | 0 | 0 | 33 | 66 |
| | 413.1 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6/19/83 | 414.0 | 1524 2.71 | 363 | 0 | 363 | 0 | 0 | 0 | 363 | 363 |
| | 415.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| | 416.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 417.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 418.0 | 1531 2.71 | 542 | 0 | 542 | 0 | 0 | 0 | 542 | 542 |
| | 419.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 420.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 421.0 | 0 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6/19/83 | 422.0 | 0 0.00 | 0 | 0 | 0 | 56 | 0 | 56 | 56 | 69 |
| ** TOTAL | ** | | | | | | | | | |

10752 20774

## APPENDIX III

Total harbor seal counts by hauling site and census. (A82 = April 1982, A83 = April 1983, M/J82 = May-June 1982, J83 = June 1983, Rookery sites underlined).

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 1.0 | 0 | 0 | 0 | 0 |
| 2.0 | 0 | 0 | 0 | 0 |
| 3.0 | 19 | 24 | 6 | 13 |
| 4.0 | 43 | 67 | 85 | 95 |
| 5.0 | 0 | 93 | 0 | 0 |
| 6.0 | 8 | 13 | 0 | 0 |
| 7.0 | 14 | 23 | 53 | 0 |
| 8.0 | 0 | 0 | 0 | 0 |
| 9.0 | 0 | 0 | 0 | 0 |
| 10.0 | 12 | 0 | 0 | 205 |
| 11.0 | 242 | 223 | 387 | 554 |
| 12.0 | 3 | 4 | 38 | 0 |
| 13.0 | 19 | 0 | 9 | 0 |
| 13.1 | | 2 | | 0 |
| 14.0 | 0 | 0 | 0 | 13 |
| 14.1 | | | | 31 |
| 15.0 | 0 | 143 | 24 | 247 |
| 16.0 | 0 | 0 | 0 | 49 |
| 17.0 | 0 | 23 | 41 | 0 |
| 18.0 | 17 | 0 | 18 | 0 |
| 19.0 | 70 | 21 | 0 | 94 |
| 20.0 | 2 | 0 | 18 | 0 |
| 21.0 | 0 | 0 | 0 | 4 |
| 21.1 | | | | 10 |
| 22.0 | 60 | 18 | 46 | 51 |
| 23.0 | 0 | 0 | 0 | 0 |
| 23.1 | | | | 2 |
| 24.0 | 19 | 0 | 0 | 58 |
| 25.0 | 81 | 39 | 138 | 0 |
| 26.0 | 51 | 0 | 0 | 0 |
| 26.1 | 0 | 22 | 0 | 0 |
| 27.0 | 22 | 0 | 29 | 0 |
| 28.0 | 0 | 0 | 0 | 0 |
| 29.0 | 0 | 2 | 0 | 0 |
| 30.0 | 0 | 0 | 0 | 0 |
| 31.0 | 40 | 0 | 67 | 0 |
| 32.0 | 0 | 0 | 1 | 0 |
| 33.0 | 13 | 14 | 0 | 0 |
| 33.1 | | 16 | | 0 |
| 34.0 | 11 | 3 | 0 | 0 |
| 35.0 | 20 | 14 | 58 | 20 |
| 35.1 | | 3 | | 0 |
| 36.0 | 0 | 0 | 22 | 13 |
| 37.0 | 16 | 0 | 60 | 0 |
| 38.0 | 9 | 0 | 0 | 0 |
| 39.0 | 29 | 0 | 132 | 66 |
| 40.0 | 0 | 0 | 0 | 0 |
| 41.0 | 23 | 5 | 57 | 25 |
| 42.0 | 17 | 12 | 9 | 36 |
| 42.1 | | | | 12 |
| 43.0 | 0 | 0 | 21 | 0 |
| 43.1 | | 1 | | 0 |
| 44.0 | 24 | 12 | 0 | 0 |
| 45.0 | 1 | 22 | 0 | 0 |
| 46.0 | 41 | 37 | 29 | 41 |
| 46.1 | | 1 | | 0 |
| 47.0 | 1 | 0 | 0 | 0 |
| 48.0 | 19 | 0 | 0 | 0 |
| 49.0 | 15 | 0 | 0 | 10 |
| 50.0 | 86 | 0 | 53 | 0 |
| 51.0 | 15 | 0 | 0 | 0 |
| 52.0 | 23 | 0 | 24 | 0 |
| 53.0 | 90 | 80 | 197 | 27 |
| 54.0 | 0 | 0 | 49 | 43 |
| 55.0 | 0 | 29 | 35 | 101 |
| 56.0 | 30 | 50 | 0 | 0 |
| 56.1 | | 39 | | 12 |
| 56.2 | | 7 | | 0 |
| 57.0 | 46 | 0 | 0 | 2 |
| 58.0 | 0 | 0 | 0 | 18 |
| 58.1 | | | | 51 |
| 59.0 | 3 | 0 | 0 | 0 |
| 60.0 | 10 | 11 | 0 | 0 |
| 61.0 | 0 | 0 | 4 | 0 |
| 62.0 | 0 | 0 | 17 | 0 |
| 63.0 | 8 | 0 | 19 | 0 |
| 64.0 | 27 | 11 | 0 | 9 |
| 65.0 | 32 | 8 | 42 | 43 |
| 65.1 | | 1 | | 0 |
| 66.0 | 17 | 14 | 0 | 51 |
| 66.1 | | 10 | | 8 |
| 66.2 | | 1 | | |
| 67.0 | 8 | 0 | 0 | 0 |
| 68.0 | 0 | 0 | 0 | 0 |
| 69.0 | 9 | 0 | 15 | 0 |
| 70.0 | 18 | 10 | 11 | 0 |
| 70.1 | | | | 8 |
| 71.0 | 23 | 0 | 8 | 87 |
| 72.0 | 68 | 0 | 23 | 0 |
| 73.0 | 8 | 13 | 0 | 0 |
| 73.1 | 0 | 5 | 0 | 0 |
| 74.0 | 33 | 33 | 50 | 48 |
| 75.0 | 17 | 7 | 0 | 23 |
| 76.0 | 71 | 48 | 0 | 90 |

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 77.0 | 5 | 0 | 0 | 17 |
| 77.1 | | | | 1 |
| 78.0 | 54 | 13 | 41 | 0 |
| 79.0 | 45 | 0 | 48 | 34 |
| 80.0 | 12 | 0 | 33 | 0 |
| 81.0 | 0 | 0 | 0 | 0 |
| 82.0 | 0 | 0 | 0 | 0 |
| 83.0 | 0 | 0 | 0 | 3 |
| 84.0 | 0 | 0 | 0 | 0 |
| 85.0 | 67 | 14 | 122 | 64 |
| 86.0 | 25 | 26 | 18 | 4 |
| 87.0 | 80 | 0 | 138 | 101 |
| 87.1 | 0 | 0 | 0 | 0 |
| 88.0 | 0 | 0 | 0 | 0 |
| 89.0 | 0 | 0 | 0 | 0 |
| 90.0 | 0 | 0 | 0 | 0 |
| 91.0 | 0 | 0 | 0 | 0 |
| 91.1 | 0 | | | 21 |
| 92.0 | 0 | 0 | 0 | 0 |
| 93.0 | 0 | 0 | 1 | 0 |
| 94.0 | 0 | 0 | 2 | 0 |
| 95.0 | 1 | 0 | 7 | 0 |
| 96.0 | 0 | 0 | 1 | 0 |
| 97.0 | 22 | 0 | 1 | 0 |
| 98.0 | 24 | 0 | 59 | 10 |
| 99.0 | 0 | 0 | 0 | 0 |
| 100.0 | 0 | 0 | 9 | 0 |
| 101.0 | 14 | 0 | 9 | 9 |
| 102.0 | 20 | 0 | 44 | 4 |
| 103.0 | 0 | 0 | 1 | 0 |
| 104.0 | 0 | 0 | 7 | 0 |
| 105.0 | 0 | 0 | 6 | 0 |
| 106.0 | 0 | 0 | 1 | 0 |
| 107.0 | 29 | 0 | 34 | 18 |
| 108.0 | 0 | 0 | 15 | 0 |
| 109.0 | 4 | 0 | 0 | 0 |
| 110.0 | 128 | 150 | 125 | 79 |
| 111.0 | 0 | 0 | 13 | 10 |
| 112.0 | 13 | 0 | 7 | 0 |
| 113.0 | 0 | 0 | 0 | 0 |
| 114.0 | 0 | 0 | 27 | 0 |
| 114.1 | | 3 | | 0 |
| 114.2 | | 8 | | 0 |
| 115.0 | 0 | 0 | 0 | 0 |
| 116.0 | 0 | 0 | 0 | 0 |
| 117.0 | 0 | 0 | 29 | 13 |
| 118.0 | 7 | 0 | 10 | 0 |
| 119.0 | 0 | 0 | 0 | 0 |
| 120.0 | 2 | 0 | 0 | 0 |
| 121.0 | 2 | 0 | 3 | 0 |
| 122.0 | 0 | 2 | 18 | 0 |
| 123.0 | 0 | 0 | 1 | 0 |
| 124.0 | 0 | 0 | 1 | 0 |

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 125.0 | 13 | 0 | 7 | 5 |
| 126.0 | 0 | 0 | 11 | 0 |
| 127.0 | 71 | 17 | 97 | 43 |
| 128.0 | 0 | 0 | 0 | 0 |
| 129.0 | 4 | 0 | 39 | 0 |
| 130.0 | 266 | 106 | 190 | 159 |
| 131.0 | 29 | 18 | 0 | 0 |
| 131.1 | | 56 | | 0 |
| 131.2 | | 3 | | 0 |
| 132.0 | 32 | 0 | 0 | 15 |
| 133.0 | 61 | 0 | 158 | 0 |
| 134.0 | 6 | 0 | 0 | 0 |
| 135.0 | 38 | 0 | 12 | 0 |
| 136.0 | 5 | 0 | 10 | 0 |
| 137.0 | 5 | 0 | 0 | 0 |
| 137.1 | | | | 2 |
| 138.0 | 0 | 0 | 26 | 14 |
| 139.0 | 0 | 0 | 14 | 12 |
| 140.0 | 0 | 0 | 12 | 0 |
| 140.1 | | 1 | | 0 |
| 141.0 | 22 | 0 | 71 | 24 |
| 141.1 | | 3 | | 0 |
| 142.0 | 11 | 0 | 22 | 0 |
| 143.0 | 0 | 0 | 2 | 0 |
| 144.0 | 28 | 0 | 19 | 0 |
| 145.0 | 25 | 0 | 24 | 7 |
| 146.0 | 0 | 0 | 0 | 17 |
| 147.0 | 0 | 0 | 32 | 0 |
| 148.0 | 10 | 0 | 25 | 0 |
| 149.0 | 36 | 51 | 71 | 24 |
| 150.0 | 51 | 56 | 96 | 58 |
| 151.0 | 36 | 14 | 53 | 8 |
| 152.0 | 29 | 20 | 41 | 0 |
| 153.0 | 28 | 13 | 6 | 13 |
| 154.0 | 0 | 0 | 18 | 0 |
| 155.0 | 0 | 7 | 29 | 27 |
| 156.0 | 14 | 31 | 47 | 0 |
| 156.1 | 0 | 14 | 0 | 54 |
| 157.0 | 145 | 129 | 145 | 120 |
| 158.0 | 2 | 0 | 0 | 0 |
| 159.0 | 6 | 0 | 0 | 0 |
| 160.0 | 30 | 21 | 23 | 43 |
| 160.1 | | 2 | | 0 |
| 161.0 | 7 | 21 | 49 | 0 |
| 162.0 | 100 | 76 | 133 | 108 |
| 162.1 | | 1 | | 0 |
| 163.0 | 0 | 0 | 0 | 7 |
| 164.0 | 0 | 5 | 17 | 34 |
| 165.0 | 33 | 0 | 28 | 34 |
| 166.0 | 41 | 36 | 138 | 0 |
| 167.0 | 0 | 58 | 28 | 45 |
| 168.0 | 0 | 0 | 1 | 0 |
| 169.0 | 39 | 31 | 37 | 40 |

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 170.0 | 0 | 0 | 1 | 0 |
| 171.0 | 0 | 33 | 8 | 3 |
| 172.0 | 0 | 19 | 120 | 83 |
| 173.0 | 23 | 53 | 12 | 0 |
| 174.0 | 80 | 0 | 23 | 0 |
| 175.0 | 76 | 46 | 53 | 26 |
| 176.0 | 25 | 31 | 3 | 1 |
| 177.0 | 60 | 5 | 71 | 16 |
| 178.0 | 43 | 43 | 83 | 74 |
| 179.0 | 0 | 0 | 36 | 0 |
| 180.0 | 21 | 20 | 44 | 22 |
| 181.0 | 7 | 17 | 0 | 0 |
| 182.0 | 0 | 0 | 3 | 0 |
| 183.0 | 0 | 4 | 1 | 0 |
| 184.0 | 0 | 1 | 1 | 0 |
| 185.0 | 0 | 1 | 3 | 0 |
| 186.0 | 12 | 0 | 9 | 0 |
| 187.0 | 4 | 2 | 0 | 0 |
| 188.0 | 50 | 39 | 70 | 95 |
| 189.0 | 0 | 0 | 0 | 0 |
| 190.0 | 43 | 0 | 23 | 53 |
| 191.0 | 0 | 0 | 0 | 0 |
| 192.0 | 9 | 29 | 10 | 20 |
| 193.0 | 0 | 24 | 0 | 0 |
| 194.0 | 20 | 33 | 45 | 29 |
| 195.0 | 0 | 26 | 34 | 40 |
| 195.1 | | 20 | | 0 |
| 196.0 | 0 | 0 | 7 | 0 |
| 197.0 | 57 | 11 | 104 | 84 |
| 197.1 | | 80 | | 0 |
| 198.0 | 23 | 36 | 118 | 0 |
| 199.0 | 0 | 25 | 0 | 45 |
| 200.0 | 0 | 0 | 7 | 58 |
| 201.0 | 30 | 34 | 0 | 5 |
| 202.0 | 0 | 11 | 25 | 35 |
| 203.0 | 0 | 0 | 0 | 0 |
| 204.0 | 0 | 13 | 0 | 1 |
| 205.0 | 283 | 154 | 197 | 125 |
| 206.0 | 0 | 0 | 0 | 7 |
| 207.0 | 0 | 8 | 60 | 17 |
| 208.0 | 0 | 0 | 7 | 0 |
| 209.0 | 0 | 8 | 0 | 58 |
| 210.0 | 0 | 0 | 0 | 0 |
| 211.0 | 0 | 0 | 0 | 0 |
| 212.0 | 0 | 0 | 0 | 0 |
| 213.0 | 40 | 71 | 85 | 85 |
| 214.0 | 0 | 0 | 8 | 3 |
| 215.0 | 12 | 5 | 10 | 3 |
| 216.0 | 0 | 0 | 1 | 0 |
| 217.0 | 36 | 61 | 88 | 103 |
| 218.0 | 115 | 101 | 112 | 118 |
| 218.1 | | 24 | | 0 |
| 219.0 | 5 | 19 | 4 | 19 |

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 220.0 | 0 | 32 | 88 | 30 |
| 221.0 | 465 | 634 | 566 | 583 |
| 222.0 | 11 | 0 | 0 | 0 |
| 223.0 | 0 | 0 | 0 | 0 |
| 224.0 | 0 | 0 | 509 | 86 |
| 225.0 | 543 | 400 | 516 | 214 |
| 226.0 | 10 | 0 | 0 | 66 |
| 226.1 | | | | 21 |
| 226.2 | | | | 72 |
| 226.3 | | | | 12 |
| 227.0 | 0 | 0 | 34 | 0 |
| 228.0 | 29 | 0 | 0 | 0 |
| 229.0 | 0 | 0 | 0 | 0 |
| 230.0 | 7 | 0 | 1 | 0 |
| 231.0 | 38 | 73 | 101 | 0 |
| 232.0 | 3 | 64 | 64 | 0 |
| 233.0 | 24 | 0 | 31 | 0 |
| 234.0 | 13 | 0 | 0 | 0 |
| 235.0 | 17 | 0 | 0 | 0 |
| 236.0 | 19 | 11 | 1 | 0 |
| 237.0 | 0 | 0 | 0 | 0 |
| 238.0 | 12 | 0 | 4 | 0 |
| 239.0 | 0 | 0 | 1 | 0 |
| 240.0 | 0 | 0 | 0 | 0 |
| 240.1 | | 3 | | 0 |
| 241.0 | 122 | 28 | 86 | 105 |
| 242.0 | 2 | 0 | 1 | 0 |
| 242.1 | | 1 | | 0 |
| 243.0 | 53 | 0 | 53 | 30 |
| 244.0 | 59 | 41 | 86 | 20 |
| 245.0 | 165 | 37 | 256 | 247 |
| 246.0 | 0 | 0 | 12 | 0 |
| 247.0 | 5 | 3 | 0 | 0 |
| 248.0 | 338 | 289 | 196 | 215 |
| 249.0 | 27 | 31 | 136 | 44 |
| 250.0 | 3 | 0 | 1 | 0 |
| 251.0 | 106 | 36 | 115 | 0 |
| 252.0 | 0 | 0 | 0 | 0 |
| 253.0 | 0 | 0 | 11 | 0 |
| 254.0 | 9 | 0 | 1 | 0 |
| 255.0 | 0 | 0 | 8 | 0 |
| 256.0 | 0 | 0 | 8 | 0 |
| 257.0 | 29 | 16 | 47 | 13 |
| 258.0 | 2 | 0 | 0 | 0 |
| 259.0 | 0 | 0 | 0 | 0 |
| 260.0 | 2 | 0 | 0 | 0 |
| 261.0 | 0 | 0 | 0 | 0 |
| 261.1 | | 10 | | 0 |
| 261.2 | | 8 | | 6 |
| 262.0 | 119 | 183 | 127 | 140 |
| 263.0 | 31 | 0 | 0 | 0 |
| 264.0 | 2 | 0 | 0 | 0 |
| 265.0 | 0 | 0 | 0 | 0 |

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 266.0 | 2 | 0 | 8 | 0 |
| 267.0 | 5 | 0 | 0 | 0 |
| 268.0 | 8 | 16 | 0 | 0 |
| 268.1 | | | | 2 |
| 269.0 | 12 | 0 | 13 | 0 |
| 270.0 | 0 | 0 | 0 | 0 |
| 270.1 | | 3 | | 0 |
| 270.2 | | 1 | | 0 |
| 271.0 | 28 | 0 | 8 | 0 |
| 272.0 | 1 | 0 | 12 | 6 |
| 273.0 | 70 | 34 | 49 | 24 |
| 274.0 | 13 | 22 | 18 | 0 |
| 274.1 | | 1 | | 0 |
| 275.0 | 0 | 0 | 20 | 17 |
| 276.0 | 3 | 0 | 0 | 0 |
| 277.0 | 27 | 0 | 51 | 0 |
| 277.1 | | 3 | | 0 |
| 278.0 | 0 | 0 | 0 | 0 |
| 279.0 | 0 | 0 | 1 | 0 |
| 280.0 | 9 | 3 | 0 | 0 |
| 281.0 | 0 | 0 | 21 | 0 |
| 282.0 | 11 | 31 | 0 | 50 |
| 283.0 | 10 | 0 | 0 | 0 |
| 284.0 | 24 | 14 | 29 | 0 |
| 284.1 | | | | 5 |
| 285.0 | 0 | 0 | 0 | 0 |
| 286.0 | 0 | 0 | 0 | 0 |
| 287.0 | 4 | 24 | 64 | 39 |
| 287.1 | | 3 | | 0 |
| 288.0 | 0 | 0 | 2 | 0 |
| 289.0 | 10 | 2 | 9 | 0 |
| 290.0 | 31 | 34 | 0 | 27 |
| 291.0 | 0 | 0 | 1 | 0 |
| 292.0 | 1 | 0 | 0 | 0 |
| 293.0 | 18 | 0 | 0 | 0 |
| 294.0 | 0 | 21 | 4 | 0 |
| 295.0 | 0 | 0 | 40 | 0 |
| 296.0 | 35 | 30 | 52 | 34 |
| 297.0 | 0 | 0 | 2 | 0 |
| 297.1 | | 3 | | 2 |
| 298.0 | 26 | 1 | 0 | 0 |
| 298.1 | | 23 | | 14 |
| 299.0 | 10 | 9 | 25 | 0 |
| 300.0 | 0 | 0 | 1 | 0 |
| 301.0 | 1 | 0 | 0 | 0 |
| 302.0 | 87 | 55 | 125 | 74 |
| 303.0 | 10 | 17 | 4 | 2 |
| 304.0 | 26 | 18 | 39 | 0 |
| 305.0 | 29 | 6 | 45 | 0 |
| 306.0 | 0 | 0 | 1 | 0 |
| 307.0 | 131 | 73 | 109 | 46 |
| 308.0 | 0 | 0 | 0 | 0 |
| 309.0 | 18 | 37 | 0 | 44 |

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 310.0 | 3 | 0 | 0 | 0 |
| 311.0 | 8 | 10 | 0 | 0 |
| 312.0 | 6 | 5 | 0 | 0 |
| 313.0 | 27 | 17 | 0 | 15 |
| 314.0 | 4 | 0 | 0 | 0 |
| 315.0 | 39 | 31 | 0 | 25 |
| 316.0 | 27 | 2 | 0 | 0 |
| 316.1 | | 1 | | 0 |
| 317.0 | 13 | 0 | 0 | 0 |
| 318.0 | 6 | 14 | 15 | 15 |
| 319.0 | 5 | 2 | 0 | 0 |
| 320.0 | 42 | 40 | 57 | 49 |
| 321.0 | 0 | 4 | 4 | 0 |
| 322.0 | 0 | 0 | 0 | 0 |
| 323.0 | 25 | 0 | 17 | 0 |
| 324.0 | 36 | 53 | 0 | 0 |
| 325.0 | 0 | 0 | 0 | 27 |
| 326.0 | 63 | 48 | 84 | 46 |
| 327.0 | 33 | 48 | 0 | 28 |
| 328.0 | 20 | 0 | 0 | 27 |
| 329.0 | 2 | 0 | 0 | 0 |
| 330.0 | 25 | 16 | 32 | 21 |
| 331.0 | 0 | 0 | 0 | 0 |
| 332.0 | 33 | 83 | 176 | 89 |
| 333.0 | 35 | 0 | 33 | 0 |
| 334.0 | 19 | 0 | 45 | 33 |
| 335.0 | 0 | 36 | 4 | 0 |
| 336.0 | 12 | 6 | 12 | 12 |
| 336.1 | | 10 | | 0 |
| 337.0 | 33 | 13 | 0 | 25 |
| 337.1 | | 0 | | 0 |
| 338.0 | 9 | 43 | 48 | 52 |
| 339.0 | 28 | 11 | 38 | 22 |
| 340.0 | 0 | 0 | 0 | 8 |
| 341.0 | 36 | 66 | 49 | 50 |
| 342.0 | 29 | 23 | 32 | 0 |
| 342.1 | | | | 7 |
| 343.0 | 11 | 31 | 27 | 0 |
| 344.0 | 17 | 19 | 18 | 15 |
| 345.0 | 0 | 0 | 31 | 0 |
| 346.0 | 0 | 41 | 0 | 26 |
| 347.0 | 0 | 21 | 0 | 13 |
| 348.0 | 0 | 27 | 0 | 31 |
| 349.0 | 44 | 28 | 51 | 26 |
| 350.0 | 0 | 20 | 27 | 18 |
| 351.0 | 2 | 0 | 0 | 0 |
| 352.0 | 85 | 123 | 183 | 105 |
| 352.1 | | 1 | | 0 |
| 353.0 | 23 | 11 | 55 | 22 |
| 354.0 | 0 | 34 | 30 | 44 |
| 355.0 | 0 | 0 | 9 | 4 |
| 356.0 | 46 | 0 | 67 | 0 |
| 357.0 | 0 | 0 | 0 | 0 |

| Site | A82 | A83 | M/J82 | J83 |
|---|---|---|---|---|
| 358.0 | 25 | 0 | 13 | 0 |
| 359.0 | 5 | 0 | 0 | 0 |
| 360.0 | 58 | 0 | 0 | 0 |
| 361.0 | 97 | 186 | 0 | 0 |
| 362.0 | 21 | 78 | 9 | 0 |
| 363.0 | 354 | 279 | 583 | 333 |
| 364.0 | 0 | 12 | 13 | 0 |
| 365.0 | 0 | 0 | 52 | 0 |
| 366.0 | 0 | 240 | 16 | 0 |
| 366.1 | | | | 86 |
| 367.0 | 0 | 0 | 10 | 0 |
| 368.0 | 43 | 14 | 0 | 0 |
| 369.0 | 11 | 8 | 0 | 0 |
| 370.0 | 0 | 0 | 0 | 0 |
| 371.0 | 25 | 19 | 14 | 0 |
| 372.0 | 3 | 0 | 0 | 0 |
| 373.0 | 101 | 104 | 172 | 117 |
| 373.1 | | 34 | | |
| 374.0 | 29 | 0 | 76 | 0 |
| 375.0 | 10 | 0 | 1 | 4 |
| 376.0 | 1 | 0 | 0 | 0 |
| 377.0 | 4 | 0 | 0 | 0 |
| 378.0 | 5 | 1 | 0 | 0 |
| 378.1 | | 2 | | 0 |
| 379.0 | 1 | 2 | 0 | 0 |
| 380.0 | 15 | 0 | 0 | 0 |
| 381.0 | 32 | 39 | 46 | 46 |
| 381.1 | | 282 | | 0 |
| 382.0 | 325 | 192 | 483 | 423 |
| 383.0 | 0 | 492 | 0 | 457 |
| 384.0 | 518 | 1 | 269 | 7 |
| 385.0 | 146 | 117 | 131 | 96 |
| 386.0 | 0 | 0 | 0 | 0 |
| 387.0 | 0 | 0 | 0 | 0 |
| 388.0 | 0 | 0 | 0 | 0 |
| 389.0 | 0 | 0 | 0 | 0 |
| 390.0 | 0 | 0 | 21 | 48 |
| 391.0 | 0 | 0 | 0 | 0 |
| 392.0 | 0 | 0 | 0 | 0 |
| 393.0 | 20 | 0 | 0 | 21 |
| 394.0 | 0 | 22 | 0 | 0 |
| 395.0 | 0 | 10 | 0 | 32 |
| 396.0 | 0 | 0 | 0 | 0 |
| 397.0 | 0 | 0 | 2 | 12 |
| 398.0 | 0 | 2 | 0 | 0 |
| 399.0 | 10 | 9 | 15 | 46 |
| 400.0 | 0 | 58 | 0 | 0 |
| 401.0 | 0 | 0 | 0 | 0 |
| 402.0 | 0 | 0 | 0 | 0 |
| 403.0 | 0 | 0 | 0 | 0 |
| 404.0 | 0 | 0 | 0 | 79 |
| 405.0 | 56 | 8 | 0 | 7 |
| 406.0 | 0 | 0 | 0 | 0 |
| 407.0 | 0 | 0 | 0 | 0 |
| 408.0 | 0 | 0 | 0 | 0 |
| 409.0 | 0 | 0 | 0 | 0 |
| 410.0 | 0 | 0 | 48 | 0 |
| 411.0 | 0 | 0 | 0 | 0 |
| 412.0 | 0 | 0 | 35 | 0 |
| 413.0 | 66 | 24 | 52 | 33 |
| 413.1 | | 1 | | 0 |
| 414.0 | 263 | 215 | 0 | 363 |
| 415.0 | 63 | 0 | 0 | 0 |
| 416.0 | 0 | 0 | 0 | 0 |
| 417.0 | 0 | 0 | 0 | 0 |
| 418.0 | 208 | 109 | 129 | 542 |
| 419.0 | 0 | | 0 | 0 |
| 420.0 | 0 | | 0 | 0 |
| 421.0 | 0 | 0 | 0 | 0 |
| 422.0 | 51 | 69 | 50 | 56 |
| Total | 10669 | 9298 | 13026 | 10752 |